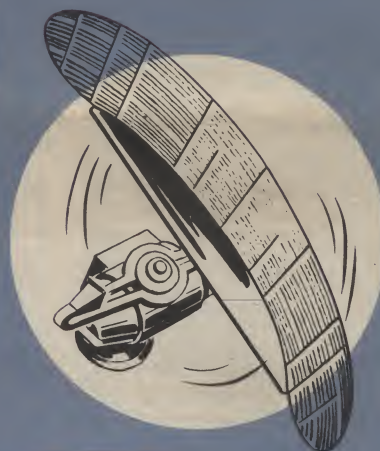


RCA



POWER & GAS TUBES



vacuum power tubes

rectifier tubes

thyratrons

ignitrons

magnetrons

vacuum-gauge tubes



RADIO CORPORATION of AMERICA
ELECTRON TUBES
HARRISON, N. J.

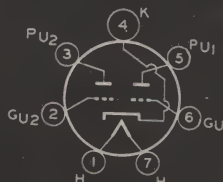
VACUUM POWER TUBES

 Type	Description
TRIODES (Air-Cooled)	
2C40	Lighthouse Triode. For use as an rf amplifier at frequencies up to 1200 Mc and cw oscillator at frequencies up to 3370 Mc. Octal 6-pin base.
2C43	Lighthouse Triode. Similar to Type 2C40 except for higher dissipation rating. For use as a cw oscillator at frequencies up to 1500 Mc.
3C33	Heater-cathode type containing two high-perveance units. For use in industrial control and voltage-regulator service. Septar 7-pin base.
10-Y	For low-power transmitters. Has thoriated-tungsten filament. Small 4-pin micanol bayonet base.
211	One of RCA's famous 50 watters. Designed for long continuous service. Jumbo 4-pin base.
800	Vhf amplifier and oscillator with thoriated-tungsten filament. Small 4-pin, bayonet base. Two small caps.
801-A	Medium-mu type with thoriated-tungsten filament. Of special use in small aircraft transmitters. Small 4-pin micanol bayonet base.
805	High-mu zero-bias class B modulator with thoriated-tungsten filament. Features high power output with low plate voltage and low distortion. Jumbo 4-pin base. Medium cap.
806	Highly efficient 1000-watt type requiring only 34 watts of driving power at the tube. Features a 50-watt thoriated-tungsten filament and a large enclosed anode. Jumbo 4-pin base. Skirted medium end cap, saddle medium side cap.
808	High-mu type for high-frequency applications. Small 4-pin, bayonet base. Medium end cap, small side cap.
809	High-perveance high-mu type with thoriated-tungsten filament. Features high efficiency and low driving power. Small 4-pin, micanol, bayonet base. Medium cap.
810	High-perveance type with a graphite anode and a thoriated-tungsten filament. Features high plate efficiency with low driving power and relatively low plate voltage. Jumbo 4-pin base. Skirted medium end cap, medium side cap.
811-A	Improved and superseding version of the popular 811. Utilizes a modified construction featuring a zirconium-coated plate having radiating fins to give greater dissipation capability and to permit increased ratings for plate current and plate input. Small 4-pin, micanol, bayonet base. Medium cap.
812-A	Improved and superseding version of the popular 812. Has same structural features of type 811-A with increased ratings for plate current and plate input.
826	Highly efficient vhf oscillator with center-tapped filament and zirconium-coated anode. Septar 7-pin base.
830-B	General purpose thoriated-tungsten filament type. Small 4-pin, bayonet base. Small cap.
833-A	Rugged, high-perveance type with a 100-watt thoriated-tungsten filament and a zirconium-coated anode. Special post terminals. For forced-air cooled ratings, see page 6.
834	Vhf power amplifier type with a 25-watt, thoriated-tungsten filament. Small 4-pin, bayonet base. Wire top terminals.
838	High-mu, zero-bias class B modulator type with thoriated-tungsten filament. Features high power output with low distortion. Jumbo 4-pin base.
841	High-mu type with thoriated-tungsten filament. Small 4-pin, bayonet base.
842	Class A modulator. Small 4-pin, bayonet base.

For key to terminal connections, see page 15. Note 1: Post and End Disc Terminal, plate; Center Disc Terminal, grid; Shell, cathode rf terminal.



See Note 1
2C40 2C43



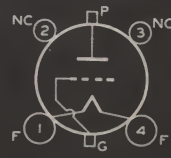
3C33



10Y 842



211 838



800 834



801-A 841

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Amplifi- cation Factor	Class of Service	Max. Fre- quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions								
							Volts	DC Input Watts	Dissipa- tion Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to- Plate Load Ohms	Approx. Driving Power Watts	Power Output Watts	Type	
TRIODES (Air-Cooled)																		
6.3	0.75	2 ⁹ / ₁₆	1 ⁵ / ₁₆	36	C-T	3370	500	—	6.5	250	-5	—	0.02	—	—	0.075	2C40	
Oscillator at 3370 Mc →																		
6.3	0.9	2 ¹¹ / ₁₆	1 ⁵ / ₁₆	48	C-T	1500	500	—	12	470	Grid Res., 1000 ohms	0.038	—	—	9	2C43		
Osc. at 350 Mc (2 tubes) →																		
12.6	1.125	3 ¹¹ / ₁₆	2 ³ / ₈	11 per unit	Max. Peak Plate Volts, ± 2000 Max. Peak Cathode Ma. (Per Unit), 500 Max. Average Grid Ma. (Per Unit), 7.5 Max. DC Grid Volts, -200 Max. Average Plate Ma. (Per Unit), 120 Max. Dissipation, 15 watts/unit													3C33
7.5	1.25	5 ³ / ₈	2 ¹ / ₁₆	8	C-P C-T	8 8	350 450	17.5 27	10 15	350 450	-135 -115	— —	0.045 0.055	— —	3.5 3.3	8 13	10-Y	
10.0	3.25	7 ⁷ / ₈	2 ⁵ / ₁₆	12	C-P C-T	15 15	1000 1250	175 220	67 100	1000 1250	-260 -225	— —	0.15 0.15	— —	14 7	100 130	211	
7.5	3.1	6 ³ / ₈	2 ¹¹ / ₁₆	15	C-P C-T	60 60	1000 1250	80 100	23 35	1000 1250	-200 -175	— —	0.07 0.07	— —	4 4	50 65	800	
7.5	1.25	5 ³ / ₈	2 ¹ / ₁₆	8	B C-P C-T	— 60 60	600 500 600	42 30 42	20 13.5 20	600 500 600	-75 -190 -150	320 — —	0.008 0.055 0.065	10000 — —	3 4.5 4	45 18 25	801-A	
10.0	3.25	8 ¹ / ₂	2 ⁵ / ₁₆	Variable	B C-P C-T	— 30 30	1500 1250 1500	315 220 315	125 85 125	1500 1250 1500	-16 -160 -105	280 — —	0.084 0.16 0.2	8200 — —	7 16 8.5	370 140 215	805	
5.0	9.5	10	3 ¹³ / ₁₆	12.6	•B •C-P •C-T	— 30 30	3300 3000 3300	825 600 1000	225 150 225	3300 3000 3300	-240 -670 -600	930 — —	0.08 0.195 0.3	16000 — —	35 24 34	1120 460 780	806	
7.5	4.0	6 ¹ / ₁₆	2 ¹³ / ₁₆	47	•B •C-P •C-T	— 30 30	2000 1600 2000	225 200 300	75 50 75	2000 1600 2000	-36 -170 -150	270 — —	0.04 0.125 0.15	21400 — —	8.8 10 9	300 150 225	808	
6.3	2.5	6 ⁹ / ₁₆	2 ⁷ / ₁₆	50	•B •C-P •C-T	— 60 60	1000 750 1000	100 75 100	30 25 30	1000 750 1000	-9 -60 -75	155 — —	0.04 0.1 0.1	11600 — —	2.7 4.3 3.8	145 55 75	809	
10.0	4.5	8 ³ / ₄	2 ¹ / ₄ *	36	•B •C-P •C-T	— 30 30	2750 2000 2500	510 500 750	175 125 175	2250 2000 2500	-60 -350 -180	380 — —	0.07 0.25 0.3	11600 — —	13 35 19	725 380 575	810	
6.3	4.0	6 ²¹ / ₃₂	2 ⁷ / ₁₆	160	•B •C-P •C-T	— 30 30	1500 1250 1500	235 175 260	65 45 65	1500 1250 1500	-4.5 -120 -70	170 — —	0.032 0.14 0.173	12400 — —	4.4 10 7.1	340 135 200	811-A	
6.3	4.0	6 ¹⁵ / ₃₂	2 ⁷ / ₁₆	29	•B •C-P •C-T	— 30 30	1500 1250 1500	235 175 260	65 45 65	1500 1250 1500	-48 -115 -120	270 — —	0.028 0.14 0.173	13200 — —	5 7.6 6.5	340 130 190	812-A	
7.5	4.0	3 ¹¹ / ₁₆	2 ³ / ₈	31	•C-P •C-T	250 250	1000 1000	95 130	45 55	1000 1000	-160 -70	— —	0.095 0.13	— —	11.5 5.8	70 90	826	
10.0	2.0	6 ¹¹ / ₁₆	2 ¹ / ₁₆	25	C-P C-T	15 15	800 1000	80 150	40 60	800 1000	-150 -110	— —	0.095 0.14	— —	5 7	50 90	830-B	
10.0	10.0	8 ¹³ / ₁₆	4 ¹⁹ / ₃₂	35	•B •C-P •C-T	— 30 30	3300 3000 3300	1300 1000 1500	350 250 350	3300 3000 3000	-80 -240 -160	440 — —	0.1 0.335 0.335	10500 — —	30 26 20	1900 800 800	833-A	
7.5	3.1	6 ⁷ / ₈	2 ¹¹ / ₁₆	10.5	C-P C-T	100 100	1000 1250	100 125	35 50	1000 1250	-310 -225	— —	0.09 0.09	— —	6.5 4.5	58 75	834	
10.0	3.25	7 ⁷ / ₈	2 ⁵ / ₁₆	Variable	B C-P C-T	— 30 30	1250 1000 1250	220 175 220	100 67 100	1250 1000 1250	0 -135 -90	200 — —	0.148 0.15 0.15	9000 — —	7.5 16 6	260 100 130	838	
7.5	1.25	5 ³ / ₈	2 ¹ / ₁₆	30	C-P C-T	6 6	350 450	21 27	10 15	350 450	-47 -34	— —	0.05 0.05	— —	2 1.8	11 15	841	
7.5	1.25	5 ³ / ₈	2 ¹ / ₁₆	3	A ₁	—	425	—	12	425	-100	—	0.028	8000	—	3.0	842	

For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. * Intermittent Commercial and Amateur Service. * Maximum Radius.



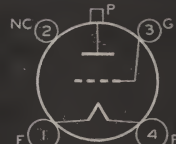
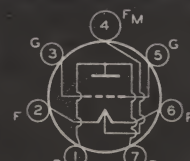
805



806 810



808

809 811-A
812-A 830-B

826



833-A

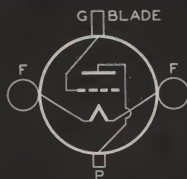
VACUUM POWER TUBES

 Type	Description
TRIODES (Air-Cooled)—Cont'd	
845	One of RCA's three famous 50-watters. Jumbo 4-pin base.
849	Heavy-duty modulator type. Will deliver 100 watts of audio power in class A service. Special end-mounting for base. Skirted large cap.
851	Heavy-duty modulator type. Will deliver 160 watts of undistorted audio power in class A service. Special end-mounting for base. Skirted large cap.
1623	Highly efficient oscillator triode. Useful as a self-excited oscillator because of stability of operation. Will deliver 75 watts output with 3.1 watts of grid drive at the tube. Small 4-pin micanol, bayonet base. Medium cap.
1626	RF oscillator. Heater-cathode type. Octal 8-pin, micanol, base.
5556	Coated-filament type featuring low grid power and uniformity of characteristics. Small 4-pin, bayonet base.
5675	Medium-Mu Triode. "Pencil" Type. For use in cathode-drive service as a class C rf power amplifier and oscillator.
5794	Fixed-Tuned Oscillator Triode. "Pencil" type. Utilizing a metal construction and intended for transmitting service in radiosonde applications. Has two resonators which are integral with tube.
5876	General-Purpose, High-Mu Triode. "Pencil" type. For use in cathode-drive circuits as an rf amplifier, if amplifier, or mixer tube in receivers operating at frequencies up to 1000 Mc; as a frequency multiplier up to about 1500 Mc, and as an oscillator up to 1700 Mc.
5893	Medium-Mu Triode. "Pencil" type. Intended particularly for cathode-drive service as a plate-pulsed oscillator up to 3300 Mc. May also be used as an rf power amplifier, cw oscillator, or frequency doubler up to 1000 Mc.
6026	High-efficiency Oscillator Triode. Subminiature type. Intended particularly for transmitting service in radiosonde and similar applications at 400 Mc.
6263	Medium-Mu Triode. "Pencil" type. Has external plate radiator. For use in cathode-drive service as an rf power amplifier and oscillator in mobile equipment and in aircraft transmitters at altitudes up to 60,000 feet without pressurized chambers.
6264	Medium-Mu Triode. "Pencil" type. Like the 6263 but has a mu of 40. Especially useful as a frequency multiplier.
8000	High-power amplifier with a 45-watt thoriated-tungsten filament and a special-processed graphite anode. Especially useful in diathermy applications. Jumbo 4-pin base. Skirted medium end-cap, medium side cap.
8003	Rugged rf power amplifier and oscillator with a 32.5-watt, thoriated-tungsten filament and graphite anode. For self-rectifying oscillator circuits in therapeutic applications. Jumbo 4-pin base. Medium cap.
8005	High-perveance type. Features high-power output with low grid driving power. For self-rectifying oscillator circuits in therapeutic applications. Small 4-pin, bayonet base. Ceramic insulated cap.
8012-A	Vhf oscillator, rf power amplifier and frequency multiplier featuring double grid and plate connections and flexible filament leads.
8025-A	Same as 8012-A except for small 4-pin, micanol, base for filament leads, and miniature caps for double grid and plate leads.

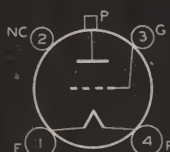
For key to terminal connections, see page 15. Note 2: G terminals nearer filament leads; P terminals nearer bulb tip. Note 3: G caps nearer base; P caps nearer bulb tip. Note 4: The heater leads for the "Pencil" tubes fit the Cinch Socket No. 54A1635 or equivalent. Connections to the plate, grid, and cathode terminals require flexible spring contacts.



845



849 851



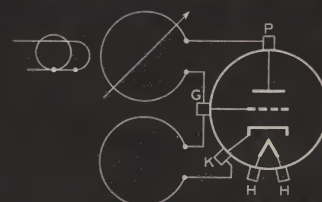
1623 8005



1626



5556

See Note 4
5675See Note 4
5794

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Amplifi- cation Factor	Class of Service	Max. Fre- quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions								
							Volts	DC Input Watts	Dissipa- tion Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to- Plate Lead Ohms	Approx. Driving Power Watts	Power Output Watts	Type	
TRIODES (Air-Cooled)—Cont'd																		
10.0	3.25	7 ⁷ / ₈	2 ⁵ / ₁₆	5.3	AB ₁	—	1250	150	100	1250	-225	440	0.04	6600	—	115	845	
11.0	5.0	14 ³ / ₈	4 ¹ / ₁₆	19	C-P C-T	3 3	2000 2500	700 875	270 400	2000 2500	-300 -250	— —	0.3 0.3	— —	14 8	425 560	849	
11.0	15.5	17 ⁵ / ₈	6 ¹ / ₈	20.5	C-P C-T	3 3	2000 2500	1800 2500	500 750	2000 2500	-300 -250	— —	0.85 0.9	— —	65 45	1250 1700	851	
6.3	2.5	6 ⁹ / ₁₆	2 ⁷ / ₁₆	20	•B •C-P •C-T	— 60 60	1000 750 1000	100 75 100	30 25 30	1000 750 1000	-40 -125 -90	230 — —	0.03 0.1 0.1	12000 — —	4.2 4 3.1	145 55 75	1623	
12.6	0.25	4 ¹ / ₈	1 ⁹ / ₁₆	5	C-T	30	250	6.25	5	250	-70	—	0.025	—	0.5	4	1626	
4.5	1.1	4 ¹ / ₂	1 ⁵ / ₈	8.5	A ₁ C-P C-T	— 6 6	350 350 350	— 14 14	7.5 7 10	350 300 350	-30 -100 -80	30 — —	0.009 0.03 0.035	18000 — —	— 0.3 0.25	0.6 4 6	5556	
6.3	0.135	2 ³ / ₈	1 ³ / ₁₆ **	20	C-T	3000	300	9	9	120	-8	—	0.025	—	—	0.475	5675	
6.0	0.16	2 ¹⁵ / ₁₆	7 ⁷ / ₈ *	—	Radiosonde Service at 1680 Mc.		Frequency (approx.), 1680 Mc. Frequency Adjustment Range, ± 12 Mc. Max. Frequency Drift, +4 to -1 Mc.				Heater-Voltage Range, 6.6 to 5.2 Volts Plate-Voltage Range, 117 to 95 Volts. Ambient Temp. Range +22 to -40°C.						5794	
6.3	0.135	2 ³ / ₈	1 ³ / ₁₆ **	56	C-T	—	360	9	6.25	250	-2	—	0.023	—	—	0.75	5876	
					C-M	—	330	7.5	6.25	300	-70	—	0.017	—	2.0	2.0		
6.0	0.330	2 ⁵ / ₁₆	2 ⁷ / ₃₂ **	27	Max. Ratings for Plate-Pulsed Oscillator Service—Class C: Maximum "On" Time, 5 microseconds Peak Positive-Pulse Plate Volts, 1750 Peak Plate Amperes, 3 Plate Dissipation, 6 watts Pulse Duration, 1.5μ sec.												5893	
5.2 to 6.6	0.2 at 6.3 volts	1 ¹ / ₂ ♦	0.4	—	C-T	—	150	3.3	3.0	135	Grid Res., 1300 ohms	0.02	—	—	—	1.25	6026	
6.0	0.28	2.6	1.0§	27	•C-P	500	330	15	9	320	-52	—	0.035	—	2.4	8	6263	
					•C-T	500	400	22	13	350	-35	—	0.04	—	—	7		
						Oscillator at 500 Mc → Rf Power Amp. at 500 Mc →				350	-58	—	0.04	—	3	10		
6.0	0.28	2.6	1.0§	40	•C-M	500	350	15.8	9.5	350	-122	—	0.037	—	4.5	3.4	6264	
10.0	4.5	8 ³ / ₄	2 ¹ / ₄ *	16.5	•B •C-P •C-T	— 30 30	2750 2000 2500	510 500 750	175 125 175	2250 2000 2500	-130 -370 -240	560 — —	0.065 0.25 0.3	12000 — —	7.9 20 18	725 380 575	8000	
10.0	3.25	8 ¹ / ₂	2 ⁹ / ₁₆	12	B C-P C-T	— 30 30	1350 1100 1350	330 220 330	100 67 100	1350 1100 1350	-100 -260 -175	480 — —	0.04 0.2 0.245	6000 — —	18 15 11	460 167 250	8003	
10.0	3.25	6 ¹¹ / ₁₆	2 ⁷ / ₁₆	20	•B •C-P •C-T	— 60 60	1500 1250 1500	250 240 300	85 75 85	1500 1250 1500	-67.5 -195 -130	330 — —	0.04 0.19 0.2	9800 — —	5.5 9 7.5	330 170 220	8005	
6.3	1.92	3 ¹⁵ / ₁₆ ♦	1 ³ / ₁₆ *	18	C-P C-T	500 500	800 1000	33 50	27 40	800 1000	-105 -90	— —	0.04 0.05	— —	1.4 1.6	22 35	8012-A	
6.3	1.92	4 ¹⁵ / ₁₆	1 ⁵ / ₆₄ *	18	•C-P •C-T	500 500	800 1000	33 50	20 30	800 1000	-105 -90	— —	0.04 0.05	— —	1.4 1.6	22 35	8025-A	

For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. * Intermittent Commercial and Amateur Service. ♦ Excluding Flexible Leads. * Maximum Radius. § Including Radiator Fin. † Per Section. ** Including Grid Flange.

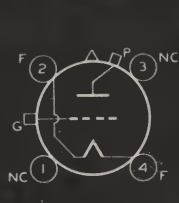


See Note 4

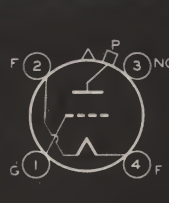
5876 5893 6263 6264



6026



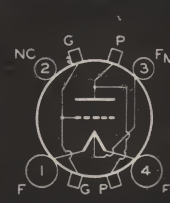
8000



8003



See Note 2 8012-A



See Note 3 8025-A

VACUUM POWER TUBES

 Type	Description
TRIODES (Forced-Air-Cooled)	
2C39-A	High-mu, Planar-electrode type. Integral radiator. For use as amplifier, oscillator and frequency multiplier. Exceptionally high transconductance. Useful up to 2500 Mc and above in cathode-drive circuits of the coaxial-cylinder type. Special terminal connections.
4C33	Compact, vhf, radiator type with unipotential cathode. For pulsed-oscillator applications. Special terminal connections. Ratings shown are for plate-modulated, pulsed-oscillator class C service up to 625 Mc.
9C22	Radiator type with multi-strand, single-phase tungsten filament and utilizing grid-flange and filament-header construction. For 50-kw broadcast transmitters and industrial heating applications. Special terminal connections.
9C25	Cathode-drive type with a multi-strand single-phase thoriated-tungsten filament and utilizing grid-flange and filament-header construction. For induction and dielectric heating purposes. Special terminal connections.
833-A	Rugged, high-perveance type with a 100-watt thoriated-tungsten filament and a zirconium-coated anode. Special post terminals. For air-cooled ratings, see page 2.
889R-A	Radiator type with a pure-tungsten filament. For use in high power broadcast and industrial rf heating applications. Special terminal connections.
891-R	Radiator type with a two-phase tungsten filament. Especially designed for induction-heating devices. Special terminal connections.
892-R	Radiator type incorporating the same design features as type 891-R but has a higher mu and slightly higher ratings. For use in general broadcast and industrial rf heating devices.
893A-R	Radiator type with a three-phase tungsten filament. Designed to permit operation from one-, three-, or six-phase ac or dc supply. For general broadcast and industrial rf heating applications. Special terminal connections.
5588	Compact, uhf, radiator type for cathode-drive circuits. Has unipotential cathode and coaxial-electrode structure. Special terminal connections. Typical values shown are for cathode-drive service at 1000 Mc.
5592	Radiator type with multistrand thoriated-tungsten filament. For cathode-drive service in 25- and 50-kw FM broadcast transmitters and for industrial service. Special terminal connections. Typical values shown are for cathode-drive service at 108 Mc.
5604-A	Radiator type with a multistrand tungsten filament. For communication and industrial service. Special terminal connections.
5671	Radiator type with multistrand tungsten filament. For use as modulator and power amplifier in 50-kw AM broadcast service. Special terminal connections.
5713	Compact, vhf radiator type with unipotential cathode. For use in cathode-drive circuits particularly those of the transmission-line type. Special terminal connections.
5762/7C24	Radiator type designed for TV, FM, AM, and industrial service. Its flanged-header grid terminal is useful in cathode-drive circuits for isolation of tube input and output. Three multiple-ribbon filament leads. Special terminal connections.
5786	Improved version of 6C24 with a more efficient radiator to provide ample plate cooling with a low-cost blower. Intended primarily for industrial applications, but useful in broadcast service. Special terminal connections.
5946	Compact, uhf, radiator type with unipotential cathode. For plate-pulsed oscillator and amplifier applications up to 1300 Mc. Special terminal connections.
6161	Compact, radiator type for uhf service in television and cw applications. Utilizes coaxial-electrode structure for use in cathode-drive circuits of the coaxial-cylinder type. Full ratings up to 900 Mc. Supersedes the 5588 for new equipment design. Special terminal connections.

For key to terminal connections, see page 15. Note 5: Diametrically opposite terminals must be connected together. Note 6: Terminal No. 5 is above grid arm.



2C39-A 4C33



See Note 5

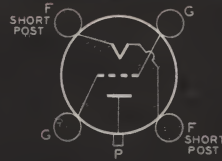
9C22 5592



9C25 5671



833-A



889R-A



891-R 892-R

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Amplifi- cation Factor	Class of Service	Max. Fre- quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions								 Type
							Volts	DC Input Watts	Dissipa- tion Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to- Plate Load Ohms	Approx. Driving Power Watts	Power Output Watts		
TRIODES (Forced-Air-Cooled)																		
6.3	1	2 3/4	1 17/64	100	C-P C-T C-M	2500 2500 2500	600 1000 1000	— — —	70 100 100	— 800 —	— -45 —	— — —	— 0.08 —	— — —	— 6 —	— 27 —	2C39-A	
5	9.1	4 7/8	2 1/16	25	DC Plate Voltage During Pulse, 13000 volts DC Grid Voltage During Pulse, -2000 volts DC Plate Current During Pulse, 30 amperes								DC Plate Current, 0.03 ampere Pulse Plate Input, 390000 watts Plate Dissipation, 250 watts					4C33
19.5	415	25	17	41	B C-P C-T	— 5 5	15000 12500 17000	60000 50000 100000	20000 14000 20000	14000 12500 17000	-300 -1670 -1600	1050 — —	0.6 3.5 5.0	4000 — —	150 1570 1450	61000 38000 65000	9C22	
6.0	285	17 3/8	14 1/4	32	B C-P C-T	— 30 30	11500 9000 11500	40000 26000 40000	17500 11500 17500	10500 8000 11000	-250 -650 -540	1310 — —	1.7 2.5 3.6	3300 — —	1500 3000 3750	50000 18000 32500	9C25	
10.0	10.0	8 13/16	4 19/32	35	•B •C-P •C-T	— 20 20	4000 4000 4000	1800 1800 2000	450 350 450	4000 4000 4000	-100 -325 -225	510 — —	0.1 0.45 0.5	11000 — —	38 42 35	2700 1500 1600	833-A	
11.0	120	11 7/8	5 1/2*	21	B C-P C-T	— 40 40	8500 6000 8500	12000 6000 16000	5000 3000 5000	7500 6000 7500	-300 -900 -800	1700 — —	0.4 1.0 2.0	5000 — —	150 140 400	15000 4000 10000	889R-A	
11.0†	60.0	22	6 1/2*	8.5	B C-T	— 1.6	10000 10000	10500 15000	3500 4000	8000 10000	-860 -2000	2260 —	0.5 1.33	8000 —	50 375	10000 10000	891-R	
11.0†	60.0	22	6 1/2*	50	B C-P C-T	— 1.6 1.6	12500 10000 12500	12000 10000 18000	4000 2500 4000	8000 8000 10000	-60 -1300 -1300	1000 — —	0.5 0.82 1.4	6800 — —	84 430 495	10500 5000 10000	892-R	
10Δ	61.0†	28	8 1/2*	34.5	B C-P C-T	— 5 5	20000 12000 20000	60000 24000 70000	20000 12000 20000	18000 12000 18000	-450 -1000 -1000	1720 — —	0.8 2.0 3.6	8000 — —	140 210 340	70000 18000 50000	893A-R	
6.3	2.5	3 13/32	1 3/4	16	C-P C-T	1200 1200	800 1000	170 250	130 200	650 835	-70 -70	— —	0.25 0.3	— —	32 32	65 100	5588	
11	412	17 3/8	14 1/4	32	C-T-F	50	11500	50000	17500	7500	-1000	—	4.4	—	9000	27000	5592	
11	176	13 3/4	5 1/2*	20	B C-P C-T	— 25 25	12500 8000 12500	32500 12000 32500	10000 6000 10000	12000 8000 12000	-600 -1000 -1170	2380 — —	0.6 1.1 2.5	5900 — —	160 200 470	36000 7100 22500	5604-A	
11	285	25	16 15/16	40	B C-P C-T	— 10 10	15000 12500 15000	90000 55000 100000	25000 17000 25000	15000 12500 15000	-320 -1500 -1500	1600 — —	0.6 4.0 6.0	3320 — —	600 1960 2040	100000 40000 70000	5671	
3.3	11.5	4 7/8	2 1/16	25	C-T	220	1500	450	250	1500	-175	—	0.3	—	65	325	5713	
12.6	29	7 1/8♦	4 11/16	29	B C-P C-T-F	— 30 30	6200 5000 6200	8700 5000 8700	3000 2000 3000	4700 4700 6000	-200 -400 -550	900 — —	0.3 0.96 1.25	3640 — —	195 720 1225	8800 4200 7000	5762/ 7C24	
11	12.5	9 5/8	2 15/16	32	B C-P C-T	— 160 160	4000 2500 3000	1500 1000 1500	600 400 600	3000 2500 3000	-95 -350 -200	470 — —	0.075 0.4 0.5	8600 — —	30 75 36	1640 810 1000	5786	
6.3	3.4	3 13/32	1 3/4	27	Max. Ratings for Plate-Pulsed Oscillator Service—Class C: Maximum "On" Time, 10 microseconds Peak Positive-Pulse Plate Volts, 7500 Peak Plate Amperes, 4.5												5946	
6.3	3.4	3 13/32	1 3/4	27	C-T-F	900	1600	400	250	1650§	150§	—	0.25	—	80	180	6161	
					C-M	Doubler to 900 Mc →				1675§	175§	—	0.25	—	100	140		
					C-B-T	900	1600	560	250	1600§	100§	—	0.35	—	75	230		
Sync. level conditions per tube. Band width, 6 Mc.																		

For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. * Intermittent Commercial and Amateur Service. † Maximum Radius. ‡ Per Section. § Referred to the Grid Terminal. ♦ Excluding Flexible Leads. Δ Per Strand.



See Note 6

893A-R



5588 5713



5604-A



5762/7C24



5786

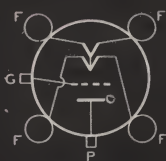


5946 6161

VACUUM POWER TUBES

 Type	Description
TRIODES (Water-Cooled)	
9C21	Multi-strand single-phase tungsten-filament type utilizing grid-flange and filament-header construction. For high-power broadcast and industrial rf heating applications. Special terminal connections.
207	High-voltage type with tungsten filament. For industrial and communication service. Special terminal connections.
862-A	Tungsten-filament type especially designed for high-power broadcast applications. Special terminal connections.
880	High-frequency tungsten-filament type. For use in high-power broadcast and industrial rf heating applications. Uses special terminal connections.
889-A	High-frequency tungsten-filament type with specially designed mount and terminal connections. Particularly suitable for industrial rf heating applications. May also be used for high-power broadcast services.
891	Two-section tungsten-filament type. Suitable as an oscillator in induction and dielectric heating devices. Special terminal connections.
892	Two-section tungsten-filament type similar to type 891 except for a higher mu.
893-A	Three-phase tungsten-filament type. Designed to permit operation from one-, three-, or six-phase ac or dc supply. For general broadcast and industrial rf heating applications. Special terminal connections.
898-A	Three-phase tungsten-filament type featuring a 100000-watt rf power output in class C telegraph service. For high-power broadcast and industrial rf heating applications. Special terminal connections.
5770	Improved version of 9C21 with thoriated-tungsten filament for high-emission capability and a saving of 60 percent in filament power, and a large heavy-duty grid. For high-power broadcast and industrial rf heating applications. Special terminal connections. Typical class C telegraphy values are for cathode-drive service.
5771	Improved version of 880 with thoriated-tungsten filament for high-emission capability and a saving of 70 percent in filament power, and high-conductivity Kovar grid and filament seals. For industrial and communications service. Special terminal connections. In class C telegraph service up to 1.6 Mc, this tube can deliver 53 kw approx.
5831	Super-Power Beam Triode. Single-phase, thoriated-tungsten-filament type capable of generating several hundred kilowatts of power at high efficiency and with exceptionally low driving power. Special terminal connections.
6383	Uhf Power Triode. Liquid-and-forced-air-cooled type with coaxial-electrode structure. Full plate voltage and plate input ratings apply up to 2000 Mc. Special terminal connections. Typical values shown are for cathode-drive service.

For key to terminal connections, see page 15. Note 5: Diametrically opposite terminals must be connected together. Note 6: Terminal No. 5 is above grid arm. Note 7: Grid terminals are spaced diametrically wider than filament terminals.



See Note 5
9C21



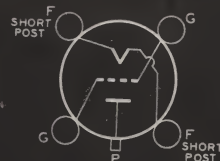
207 846



862-A



See Note 7
880



889-A



891 892

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Amplifi- cation Factor	Class of Service	Max. Fre- quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							 Type
							Volts	DC Input Watts	Dissipa- tion Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to- Plate Load Ohms	Approx. Driving Power Watts	Power Output Watts	
TRIODES (Water-Cooled)																	
19.5	415	24½	9½	40	B C-P C-T	— 15 15	15000 12500 17000	90000 50000 150000	40000 28000 40000	14000 12500 17000	-300 -1670 -1600	1050 — —	0.6 3.5 7.9	4000 — —	150 1570 1800	61000 38000 100000	9C21
22.0	52.0	20¼♦	6½*	20	B C-P C-T	— 1.6 1.6	15000 10000 15000	20000 10000 30000	7500 6600 10000	12500 10000 12000	-575 -2000 -1600	2300 — —	0.4 0.75 1.67	10000 — —	400 185 235	22500 6000 15000	207
33.0	207	60⅜♦	10*♦	45	B C-P C-T	— 1.6 1.6	15000 12000 20000	100000 60000 200000	50000 50000 100000	12000 12000 18000	0 -800 -1000	2000 — —	3.0 5.0 8.33	1800 — —	450 2000 2400	90000 45000 100000	862-A
12.6	320	11⅜	7	20	B C-P C-T	— 25 25	10500 10500 10500	40000 36000 60000	15000 12000 20000	10000 10000 10000	-450 -1200 -1000	1680 — —	1.0 3.6 6.0	3100 — —	540 1100 1500	46000 27000 40000	880
11.0	120	1011⁄16	3⅝	21	B C-P C-T	— 50 50	8500 6000 8500	12000 6000 16000	5000 3000 5000	7500 6000 7500	-300 -900 -800	1700 — —	0.4 1.0 2.0	5000 — —	150 140 400	15000 4000 10000	889-A
11.0‡	60.0	20⅞	6½*	8.5	B C-T	— 1.6	15000 12000	20000 18000	5000 6000	12500 10000	-1450 -2000	3760 —	0.4 1.33	12000 —	245 375	22000 10000	891
11.0‡	60.0	20⅞	6½*	50	B C-P C-T	— 1.6 1.6	15000 10000 15000	20000 10000 30000	7500 6600 10000	12500 10000 12000	-170 -1600 -1600	1370 — —	0.4 0.78 1.55	10000 — —	160 460 565	22000 6000 14000	892
10^	61.0‡	26¾	6⅜*	34.5	B C-P C-T	— 5 5	20000 12000 20000	60000 24000 70000	20000 12000 20000	18000 12000 18000	-450 -1000 -1000	1720 — —	0.8 2.0 3.6	8000 — —	140 210 340	70000 18000 50000	893-A
33.0‡	70.0‡	60⅜	10*♦	45	B C-P C-T	— 1.6 1.6	15000 12000 20000	100000 60000 200000	50000 50000 100000	12000 12000 18000	-100 -800 -1000	2200 — —	2.0 5.0 8.33	2000 — —	6000 2000 2400	90000 45000 100000	898-A
11	285	24½	9½	40	B C-P C-T	— 20 20	15000 12500 17000	90000 60000 150000	50000 33000 50000	15000 12500 17000	-320 -1500 -1450	1560 — —	0.6 4.5 8.5	2640 — —	688 2160 11200	117000 45000 114000	5770
7.5	170	11⅝16	7	20	B C-P C-T	— 25 25	12500 10000 12500	45000 40000 60000	22500 15000 22500	12500 10000 12500	-600 -840 -630	1900 — —	1.0 3.8 4.8	4400 — —	430 1010 1050	55000 29000 44000	5771
6.0	2100	38¾	917⁄32	30	B C-P C-T	— ■ ■	10500 10500 16000	300000 250000 650000	135000 135000 150000	10000 10000 16000	-390 -1000 -925	1800 — —	6 21.9 39	425 — —	800 900 900	370000 175000 500000	5831
6.3	3.4	49⁄32	125⁄32	27	A1	—	1500	600	600	1500	-40	35	0.25	Load Res., 1550 ohms		60	6383
					C-P	2000	1200	400	400	1280§	80§	—	0.335	—	53	100	
					C-T-F	2000	1500	600	600	1580§	80§	—	0.4	—	85	150	
						C-M	Doubler to 900 Mc →				1675§	175§	—	0.4	—	160	225

For explanatory notes on class of service, see page 14.

To facilitate comparison between types, all values are given on an absolute-maximum basis. § Excluding Flexible Leads. † Up through "Standard Broadcast Band." * Maximum Radius.

Unless otherwise speci-



See Note 6
893-A



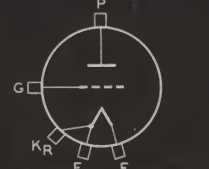
See Note 6
898-A



5770



See Note 7
5771

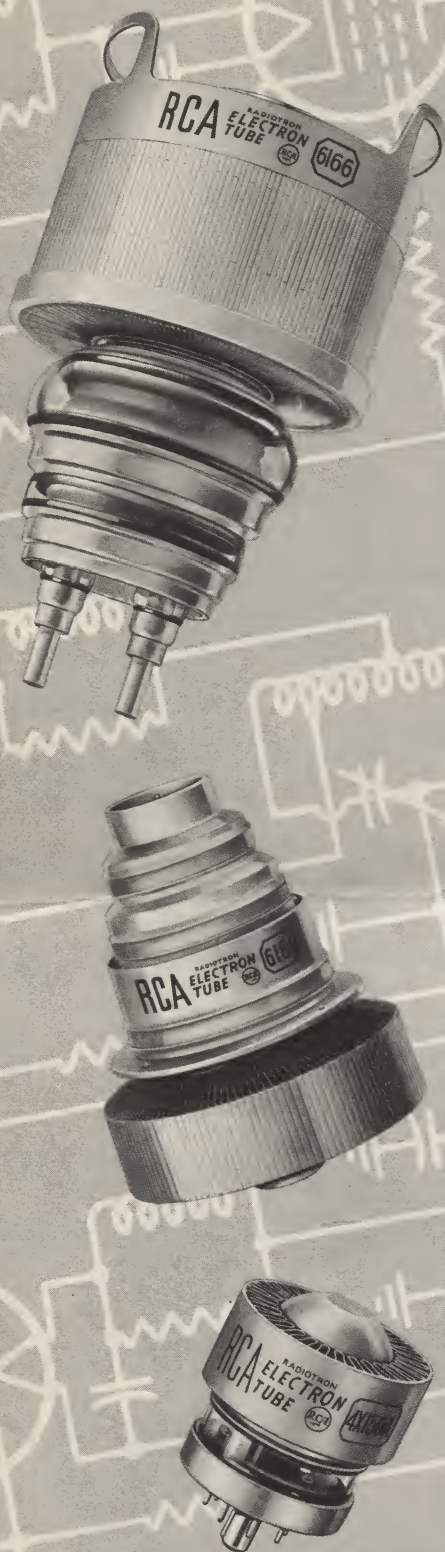


5831



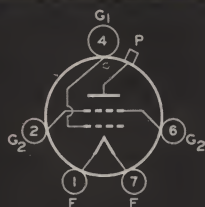
6383

VACUUM POWER TUBES

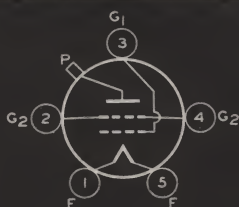


Type	Description
TETRODES (Air-Cooled)	
4-65A	Small, vhf, thoriated-tungsten filament type for power amplifier and oscillator service. Medium-molded-flare septar 5-pin base. Skirted small cap.
4-125A/4D21	High-frequency rf amplifier with thoriated-tungsten filament. For FM transmitters. Special metal-shell, giant 5-pin base. Skirted small cap.
860	Thoriated-tungsten filament type featuring high power without neutralization. Small 4-pin, ceramic, bayonet base.
861	Thoriated-tungsten filament type with plate, grid, and screen leads supported on separate stems to insure high insulation. Special terminal connections.
865	Thoriated-tungsten filament type of rf power amplifier and frequency multiplier. Small 4-pin, bayonet base. Small cap.
TETRODES (Forced-Air-Cooled)	
4-250A/5D22	Compact, radiator type with thoriated-tungsten filament. For use as power amplifier and modulator. Requires low driving power. Special metal-shell giant 5-pin base. Skirted small cap.
4-1000A	Radiator type with thoriated-tungsten filament. For vhf service as an amplifier, oscillator, and modulator. Special 5-contact socket.
4X150A	Very small and compact, uhf, radiator type with unipotential cathode. For power amplifier or oscillator service. May also be used as a wide band amplifier in video applications. Special 8-pin base.
4X500A	Small, compact, radiator type with thoriated-tungsten filament. For use as an rf power amplifier and oscillator. Special terminal connections.
827-R	Radiator type with a helical thoriated-tungsten filament. For FM, television and general broadcast services. Special terminal connections.
6166	Radiator type with a thoriated-tungsten filament. Intended for vhf service in television and cw applications. Coaxial-electrode structure for use with high-power circuits of the coaxial-cylinder type. Plate dissipation of 10 kw. Special terminal connections.
6181	Radiator type for uhf service in television and cw applications. Capable of delivering a synchronizing-level power output of 1200 watts in broad-band television service. Coaxial-electrode structure designed especially for use with high-power circuits of the coaxial-cylinder cavity type. Coated, unipotential cathode. Special terminal connections.
TETRODES (Water-Cooled)	
8D21	Water-cooled push-pull twin type with a thoria-coated multi-strand filament. For use as a class C grid-modulated rf power amplifier in television service. Features high power sensitivity, low interelectrode capacitances, and excellent internal shielding. Special terminal connections.

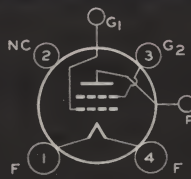
For key to terminal connections, see page 15. Note 9: At the lower frequencies, pin 1 is used for grid-No. 2 connection; at the higher frequencies, contact-ring is used.



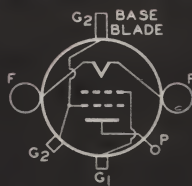
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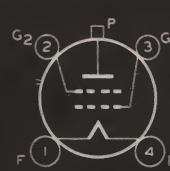
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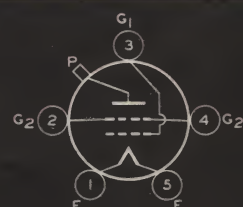
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861



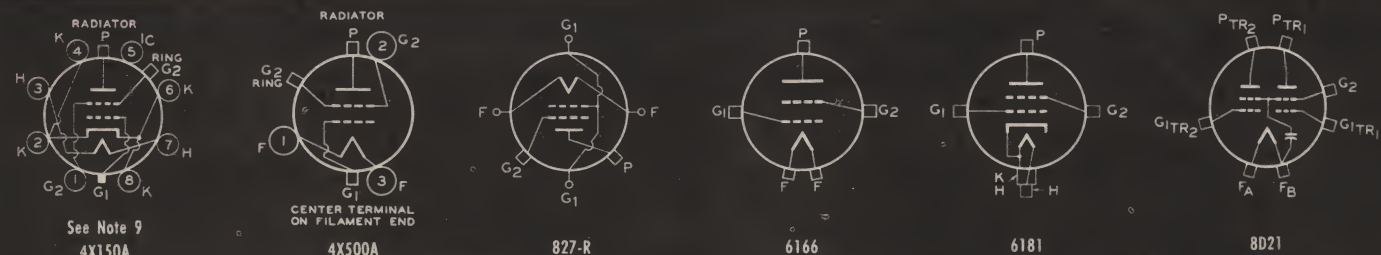
865

4-250A/5D22
4-1000A

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Transcon- ductance Micro- mhos	Class of Service	Max. Fre- quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							 Type
							Volts	DC Input Watts	Dissipa- tion Watts	Plate Volts	Grid- No. 3 Volts	Grid - No. 2 Volts	Grid - No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Power Output Watts	
TETRODES (Air-Cooled)																	
6	3.5	4 3⁄8	2 3⁄8	5 5⁄8 4000	AB₂ C-P C-T-F	— 50 50	3000 2500 3000	— — —	65 45 65	1800 2500 3000	— — —	250 250 250	-50 -135 -100	0.05 0.11 0.115	1.3 2.6 1.7	270 230 280	4-65A
5.0	6.5	5 11⁄16	2 3⁄4	5.9 5⁄8 2450	C-P C-T	120 120	2500 3000	— —	85 125	2500 3000	— —	350 350	-210 -150	0.152 0.167	3.3 2.5	300 375	4-125A/ 4D21
10.0	3.25	8 3⁄4♦	4 1⁄4*♦	1100	C-P C-T	30 30	2000 3000	170 300	67 100	2000 3000	— —	220 300	-200 -150	0.085 0.085	17 7	105 165	860
11.0	10.0	17 1⁄32	6 5⁄8*♦	2400	C-P C-T	20 20	3000 3500	650 1200	270 400	3000 3500	— —	375 500	-200 -250	0.2 0.3	35 30	400 700	861
7.5	2.0	5 3⁄4	2 1⁄16	750	C-P C-T	15 15	500 750	30 45	10 15	500 750	— —	125 125	-120 -80	0.04 0.04	2.5 1.0	10 16	865
TETRODES (Forced-Air-Cooled)																	
5.0	14.5	6 3⁄8	3 9⁄16	5.1 5⁄8 4000	AB₂ C-P C-T-F	— 110 110	4000 3200 4000	— — —	250 165 250	3000 3000 4000	— — —	300 400 500	-53 -310 -225	0.125 0.225 0.312	1.9 3.2 2.46	1040 510 1000	4-250A/ 5D22
7.5	21	9 5⁄8	5 1⁄4	7 5⁄8 10000	AB₂ C-P C-T-F	— 110 110	6000 5000 6000	— — —	1000 670 1000	6000 5000 6000	— — —	500 500 500	-75 -200 -200	0.15 0.6 0.7	9.4 11 15	3900 2440 3400	4-1000A
6.0	2.6	2 15⁄32	1 21⁄32	5 5⁄8 12000	AB₂ C-T-F C-P	— 500 500	1250 1250 1000	— — —	150 150 100	1250 1250 1000	— — —	300 280 250	-44 -80 -105	0.18 0.2 0.2	0.075 10 2	425 140 140	4X150A
5.0	13.5	4 3⁄4	2 5⁄8	6.2 5⁄8 5200	C-T-F	120	4000	—	500	4000	—	500	-150	0.315	5	835	4X500A
7.5	25	5 11⁄16♦	4 21⁄32	16 5⁄8	C-P C-T	110 110	3000 3500	1200 1500	550 800	3000 3500	— —	750 700	-325 -300	0.4 0.428	68 50	825 1050	827-R
5.0	175	11 5⁄8	6 13⁄32	10 5⁄8	C-P C-T-F C-B-T	30 30 216	5000 6600 6000	10000 18000 22000	6600 10000 10000	4700 5800 5800	— — —	800 1200 1200	-280 -175 -130	1.56 2.6 3.45	180 750 800	5500 9000 12000	6166
Sync. level conditions per tube. Band width, 8.5 Mc.																	
120	1.6	7 7⁄16	5 1⁄32	8 5⁄8	C-P C-T-F C-B-T	900 900 900	1600 2000 2000	1650 2500 3500	1300 2000 2000	1775‡ 1910‡ 1875‡	— — —	550‡ 550‡ 550‡	175‡ 110‡ 75‡	1.0 0.9 1.7	250 150 200	950 600 1200	6181
Sync. level conditions per tube. Band width 8 Mc.																	
TETRODES (Water-Cooled)																	
3.2	125 1	12 9⁄32	5 3⁄4	5 5⁄8 per Unit	See text	300	6000 Synchronizing Level→ Black Level→ White Level→	10000 5000 5000 5000	6000 5000 5000 5000	5000 5000 5000 5000	— — — —	800 800 800 800	— -220 -400 -820	— 1.9 1.45 —	— △ △ —	— 5300 3100 —	8D21

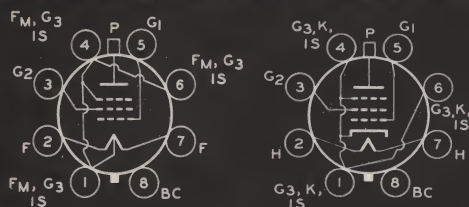
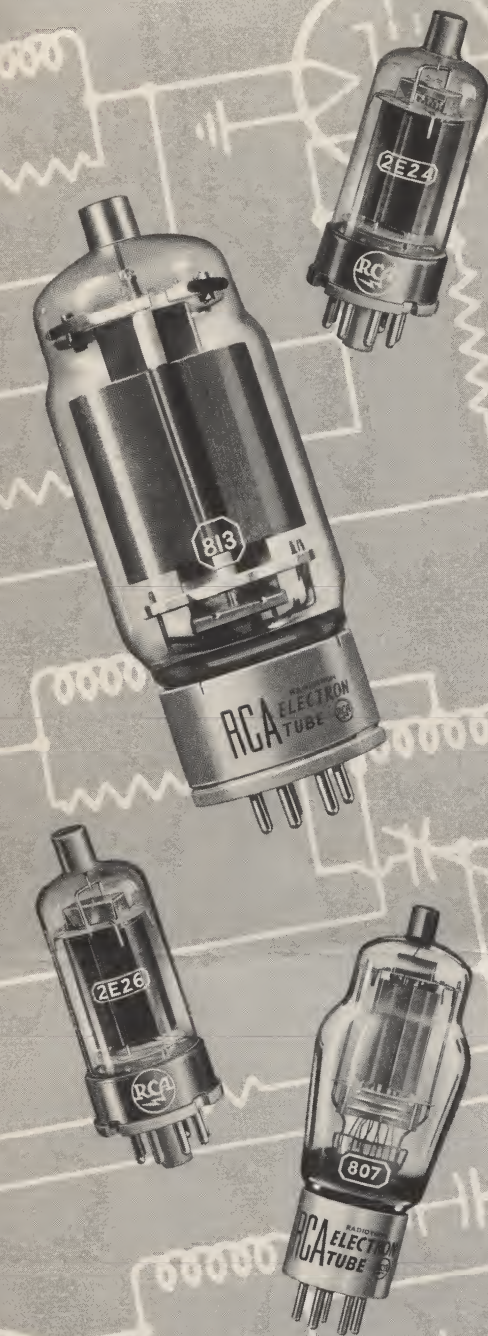
For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise speci-
fied, all values shown are for Continuous Commercial Service. * Maximum Radius. ♦ Excluding Flexible Leads. § Grid-Screen Mu-Factor. Δ 300 to 500 Watts.
‡ Referred to Grid Terminal.



VACUUM POWER TUBES

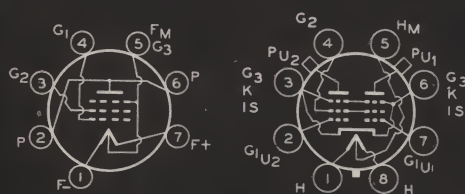
Type	Description
BEAM POWER TUBES AND PENTODES (Air-Cooled)	
2E24	Beam power tube of the coated-filament type. For intermittent operation in mobile communications equipment. Octal 8-pin base. Small cap.
2E26	Beam power tube of the heater-cathode type. Designed for use in the low-power driver stages or in the output stages of FM transmitters. Octal 8-pin base. Small cap.
3A4	Power Amplifier Pentode. Coated-filament, dry-cell miniature type. Can deliver 1.2 watts power output at 10 Mc in rf amplifier service. 7-pin base.
3E22	Push-pull beam power tube of the heater-cathode type. For intermittent mobile service applications. Octal 8-pin base. Two small caps.
3E29	High-perveance, twin-unit beam power tube with unipotential cathodes. For use in rectangular-wave pulse modulator service. Medium molded-flare septar 7-pin base.
4E27/8001	Beam power tube with an enclosed tantalum anode. Medium metal shell, giant 7-pin, bayonet base. Wire top terminal.
4E27A/5-125B	Filament type with high power gain. For use as an amplifier, oscillator and modulator. The grid-No.-1-to-plate capacitance of only 0.08 μmf permits stable operation without neutralization in most applications. Unilaterally interchangeable with types 4E27, 257, 257B, and 8001.
802	Oscillator pentode of the heater-cathode type. Features 23 watts output with only 0.3 watt grid drive at the tube. Medium 7-pin, bayonet base. Small cap.
803	Pentode with heavy-duty thoriated-tungsten filament and graphite anode. Medium shell giant 5-pin, micanol, bayonet base. Medium cap.
804	RF pentode with zirconium-coated anode. Requires less than 2 watts of driving power in any rf service. Small 5-pin, micanol base. Small cap.
807	Beam power tube of the heater-cathode type. For amateur transmitter design. Features high power sensitivity and extremely low grid-driving power. Small 5-pin, micanol base. Small cap.
813	Beam power tube with thoriated-tungsten filament. Useful as a high-power final amplifier for quick band-change. Giant 7-pin base. Medium cap.
814	Beam power tube with thoriated-tungsten filament and zirconium-coated anode. Small 5-pin, micanol base. Small cap.
815	Push-pull beam power tube with heater-cathode. For experimental low-power, FM, and television transmission. Octal 8-pin base. Two small caps.
828	Beam power tube with a 32.5-watt thoriated-tungsten filament. Features 300 watts audio power (CCS) output per pair with zero driving power and 1% distortion. Small, micanol, 5-pin base. Small cap.
829-B	Push-pull beam power tube of the heater-cathode type. Septar 7-pin base. Two wire top-terminals.
832-A	Push-pull beam power tube of the heater-cathode type with features similar to the 829-B. Features exceptional efficiency at very high frequencies.
837	12.6-volt heater-cathode type of beam power tube for aircraft, police, and commercial use. Medium 7-pin, micanol, bayonet base. Small cap.
1613	Metal type amplifier pentode of the heater-cathode type. For police and emergency broadcast use. Useful as a crystal oscillator. Octal 7-pin base.
1614	Metal type beam power tube of the heater-cathode type. For police and emergency broadcast use. Octal 7-pin base.
1619	Metal type beam power tube with a fast-heating coated filament. Useful in equipment requiring quick-on-off action. Octal 7-pin base.
1624	Quick-heating beam power tube of the coated-filament type. Similar to type 807 except for 2.5-volt filament. Small 5-pin base. Small cap.

For key to terminal connections, see page 15.



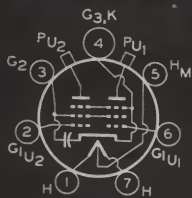
2E24

2E26

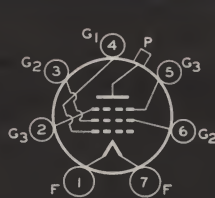


3A4

3E22 815

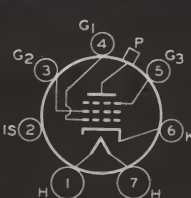


3E29

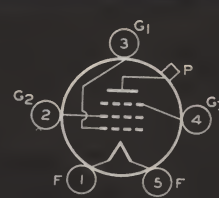


4E27/8001

4E27A/5-125B



802 837



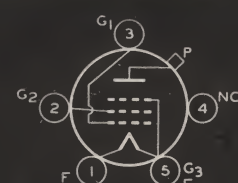
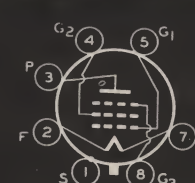
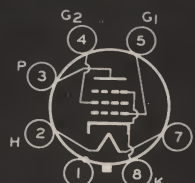
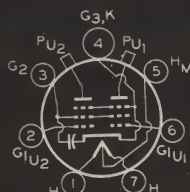
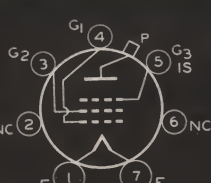
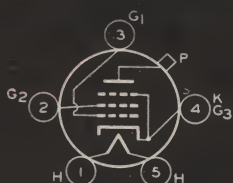
803 804

814 828

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Transcon- ductance Micro- mhos	Class of Service	Max. Fre- quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							 Type
							Volts	DC Input Watts	Dissipa- tion Watts	Plate Volts	Grid - No. 3 Volts	Grid - No. 2 Volts	Grid - No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Power Output Watts	
BEAM POWER TUBES AND PENTODES (Air-Cooled)																	
6.3	0.65	3 ²¹ / ₃₂	1 ⁵ / ₁₆	7.5 § 3200	■ C-P ■ C-T	125 125	600 700	37 55	12 18.5	600 650	— —	180 200	-45 -47	0.06 0.084	0.17 0.24	24 37	2E24
6.3	0.8	3 ²¹ / ₃₂	1 ⁵ / ₁₆	6.5 § 3500	■ AB ₂ ■ C-P ■ C-T	— 125 125	600 600 700	45 37 55	17 12 18.5	600 600 650	— — —	125 200 200	-20 -50 -49	0.026 0.06 0.084	0.91 0.15 0.2	58 24 36	2E26
1.4 2.8	0.2 0.1	2 ¹ / ₈	3/ ₄	2250	A ₁ C-T	— 10	150 150	— 3	2 2	150 150	— —	90 135	-8.4 —	13.3 0.0183	— —	0.7 1.2	3A4
6.3 12.6	1.6 0.8	4 ⁹ / ₁₆	2 ³ / ₈	6.5 § 4000	■ C-P ■ C-T	15 15	560 600	90 100	30 35	560 600	— —	200 200	-50 -55	0.16 0.16	0.4 0.45	67 72	3E22
6.3 12.6	2.25 1.125	4 ⁵ / ₁₆	2 ³ / ₈	9 § 8500	Max. Ratings for Modulator Service (Rectangular-Wave Modulation) [▲] Duty Factor, between 0.0001 and 1.0—Averaging Time, 1200μ sec. DC Plate Supply Volts, 5000 Plate Input, 85 watts Peak Plate Amperes, 10 (duty factor = 0.001) Plate Dissipation, 15 watts												3E29
5.0	7.5	6 ³ / ₁₆	2 ¹¹ / ₁₆	2800	C-P C-T	75 75	3000 4000	250 300	65 75	2500 3000	60 60	600 750	-200 -200	0.1 0.1	0.1 0	200 235	4E27/ 8001
5.0	7.5	6 ³ / ₁₆	2 ³ / ₄	5 § 2150	C-P C-T	75 75	3200 4000	— —	85 125	2500 3000	0 0	500 750	-205 -250	0.152 0.167	2.0 0.9	295 375	4E27A/ 5-125B
6.3	0.9	5 ³ / ₄	2 ¹ / ₁₆	2250	• C-P • C-T	30 30	500 600	20 33	8 13	500 600	40 40	245 250	-40 -120	0.04 0.055	0.1 0.3	12 23	802
10.0	5.0	9 ¹ / ₄	2 ⁹ / ₁₆	4000	C-P C-T	20 20	1600 2000	250 350	85 125	1600 2000	100 40	400 500	-80 -90	0.15 0.16	5 2	155 210	803
7.5	3.0	7 ¹¹ / ₁₆	2 ¹ / ₁₆	3250	• C-P • C-T	15 15	1250 1500	100 150	35 50	1250 1500	50 45	250 300	-90 -100	0.075 0.1	0.75 1.95	65 110	804
6.3	0.9	5 ³ / ₄	2 ¹ / ₁₆	8 § 6000	• AB ₂ • C-P • C-T	— 60 60	750 600 750	90 60 75	30 25 30	750 600 750	— — —	300 300 250	-35 -85 -45	0.03 0.1 0.1	0.2 0.4 0.3	120 44 54	807
10.0	5.0	7 ¹ / ₂	2 ⁹ / ₁₆	8.5 § 3750	• AB ₂ • C-P • C-T	— 30 30	2500 2000 2250	450 400 500	125 100 125	2500 2000 2250	0 0 0	750 350 400	-95 -175 -155	0.035 0.2 0.22	0.35 4.3 4.0	650 300 375	813
10.0	3.25	7 ¹¹ / ₁₆	2 ¹ / ₁₆	3300	• C-P • C-T	30 30	1250 1500	180 225	50 65	1250 1500	0 0	300 300	-150 -90	0.144 0.15	2.0 1.5	130 160	814
6.3 12.6	1.6 0.8	4 ⁹ / ₁₆	2 ³ / ₈	6.5 § 4000	• C-P • C-T	125 125	400 500	60 75	20 25	400 500	— —	175 200	-45 -45	0.15 0.15	0.16 0.18	45 56	815
10.0	3.25	7 ¹¹ / ₁₆	2 ¹ / ₁₆	2700	• AB ₁ • C-P • C-T	— 30 30	2000 1250 1500	270 200 270	80 70 80	2000 1250 1500	60 75 75	750 400 400	-120 -140 -100	0.05 0.16 0.18	0 2.7 2.2	385 150 200	828
6.3 12.6	2.25 1.125	4 ⁵ / ₁₆	2 ³ / ₈	9 § 8500	AB ₁ • C-P • C-T	— 200 200	750 600 750	100 90 120	30 28 40	600 600 750	— — —	200 200 200	-18 -60 -50	0.04 0.15 0.16	— 0.5 0.4	44 70 90	829-B
6.3 12.6	1.6 0.8	3 ⁵ / ₁₆	2 ³ / ₈	6.5 § 3500	C-P C-T	200 200	600 750	22 36	10 15	600 750	— —	200 200	-65 -65	0.036 0.048	0.18 0.19	17 26	832-A
12.6	0.7	5 ³ / ₄	2 ¹ / ₁₆	3400	C-P C-T	20 20	400 500	20 32	8 12	400 500	40 40	140 200	-40 -75	0.045 0.06	0.3 0.4	11 22	837
6.3	0.7	3 ¹ / ₄	1 ⁵ / ₁₆	2500	C-P C-T	45 45	275 350	11.5 17.5	7 10	275 350	— —	200 200	-35 -35	0.042 0.050	0.16 0.22	6 9	1613
6.3	0.9	4 ⁵ / ₁₆	1 ⁵ / ₈	6050	• C-P • C-T	80 80	375 450	35 45	21 25	375 450	— —	250 250	-50 -45	0.093 0.1	0.15 0.15	24.5 31	1614
2.5	2.0	4 ⁵ / ₁₆	1 ⁵ / ₈	4500	AB ₂ C-P C-T	— 45 45	400 325 400	30 20 30	15 10 15	400 325 400	— — —	300 285 300	-16.5 -50 -55	0.075 0.062 0.075	0.4 0.18 0.36	36 13 19.5	1619
2.5	2.0	5 ³ / ₄	2 ¹ / ₁₆	4000	AB ₂ C-P C-T	— 60 60	600 500 600	54 37.5 54	25 16.5 25	600 500 600	— — —	300 275 300	-25 -50 -60	0.042 0.075 0.09	1.2 0.25 0.43	72 24 35	1624

For explanatory notes on class of service, see page 14. To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. • Intermittent Commercial and Amateur Service. ▲ Values are for Units in Parallel. ■ Intermittent Mobile Service. § Grid-Screen Mu-Factor.



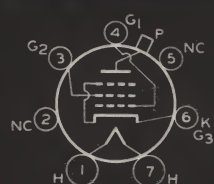
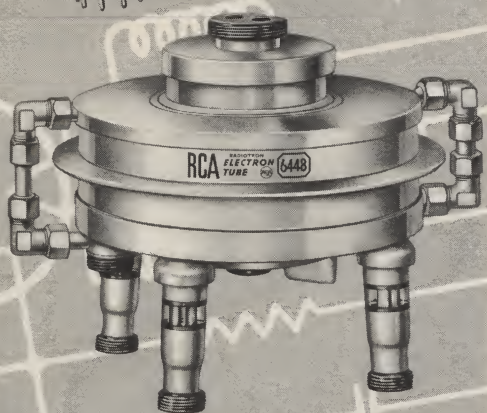
VACUUM POWER TUBES

 Type	Description
BEAM POWER TUBES AND PENTODES (Air-Cooled)—Cont'd	
1625	Same as 807 except for 12.6-volt filament. Medium 7-pin, micanol base.
5618	Transmitting pentode of the 7-pin miniature type for use in mobile and other communications equipment where compactness and low filament-power consumption are primary requirements. Has quick-heating, mid-tapped, coated filament for operation at either 6 or 3 volts. Typical values shown are for operation at 80 Mc.
5763	Beam power tube of the 9-pin miniature type for use in compact, low-power mobile transmitters and in the low-power stages of fixed station transmitters. Particularly useful in doubler and tripler service. Has unipotential cathode.
5894	Small, sturdy, twin beam power tube. For use as a push-pull rf power amplifier or as a frequency tripler in fixed and mobile equipment operating between 450 and 470 Mc. Plate dissipation rating of 40 watts. Features high power sensitivity, 100 watts input (CCS) at 470 Mc, and 120 watts input (CCS) up to 250 Mc. Small-wafer septar 7-pin base. Two wire-top terminals.
6146	Small, sturdy, vhf beam power tube. Operates at relatively low plate voltages due to its high efficiency and high power sensitivity. For use as an amplifier, oscillator, and modulator in both fixed and mobile equipment. Useful up to 175 Mc at reduced ratings. Octal 8-pin base.
6159	Vhf beam power tube. Like the 6146 but has a 26.5-volt heater for use in aircraft service.
6293	Small, sturdy, beam power tube intended for pulse modulator service in both fixed and mobile equipment. Rated for service with duty factors up to 1.0 at a maximum averaging time of 10,000 microseconds. Octal 8-pin base.
6417	Transmitting beam power tube. Like the 5763 but has a 12.6-volt heater for operation directly from 12-volt storage batteries.
6524	Small, sturdy, twin beam power tube. Intended primarily as a push-pull, rf power amplifier or frequency tripler in fixed and mobile equipment operating between 450 and 470 Mc. Plate dissipation rating of 25 watts. Features high power sensitivity, 45 watts input (ICAS) at 470 Mc, and 85 watts input (ICAS) up to 100 Mc. Medium-button septar 7-pin base. Two wire-top terminals.
BEAM POWER TUBES AND PENTODES (Water-Cooled)	
6448	Uhf Beam Power Tube. Provides high gain up to 1000 Mc as a grid-driven power amplifier. In color or black-and-white TV service, it can deliver a synchronizing-level power output of 15 Kw at 500 Mc, or 12 Kw at 900 Mc.

EXPLANATION OF CLASS-OF-SERVICE ABBREVIATIONS

- C-P = Class C Plate-Modulated Telephone Service.
- C-T = Class C Telegraph Service.
- C-T-F = Class C Telegraph or FM Telephone Service.
- A₁ = Class A₁ AF Modulator Service.
- AB₁ = Class AB₁ Push-Pull AF Modulator Service.
- AB₂ = Class AB₂ Push-Pull AF Modulator Service.
- B = Class B Push-Pull AF Modulator Service.
- C-B-T = Class B Television Service.
- C-C-T = Class C Television Service.
- C-M = Frequency Multiplier Service.

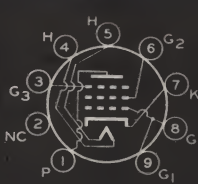
NOTE: In Classes of Service C-B-T, C-C-T, C-P, C-T, C-T-F, A₁, and C-M, the values shown under Maximum Plate Ratings and Typical Operating Conditions are for one tube. In Classes of Service AB₁, AB₂, and B, the values shown under Maximum Ratings are for one tube; and those under Typical Operating Conditions are for two tubes.



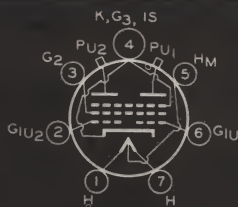
1625



5618



5763



5894



6146

VACUUM POWER TUBES

Cathode		Max. Dimensions Inches		Transcon- ductance Micro- mhos	Class of Service	Max. Fre- quency for Full Input Mc	Max. Plate Ratings			Typical Operating Conditions							Type		
							Volts	DC Input Watts	Dissipa- tion Watts	Plate Volts	Grid - No. 3 Volts	Grid - No. 2 Volts	Grid - No. 1 Volts	Plate Amperes	Approx. Driving Power Watts	Power Output Watts			
BEAM POWER TUBES AND PENTODES (Air-Cooled)—Cont'd																			
12.6	0.45	5 $\frac{3}{4}$	2 $\frac{1}{16}$	For maximum ratings and typical operating conditions, refer to Type 807.														1625	
6.0° 3.0Δ	0.23° 0.46Δ	2 $\frac{5}{8}$	3 $\frac{1}{4}$	—	• C-T-F	100	300	7.5	5	300	0	75	-45	0.025	0.3	4.5	5618		
					• C-M	100	300	7.5	5	300	0	75	-125	0.025	0.75	3.5			
						Doubler to 80 Mc→ Tripler to 80 Mc→				300	0	75	-125	0.025	0.75	3.5	2.7		
6.0	0.75	2 $\frac{5}{8}$	7 $\frac{1}{8}$	16 $\frac{1}{2}$ 7000	C-T-F	50	300	15	12	300	0	250	-60	0.05	0.35	7	5763		
					C-M	50	300	15	12	300	0	▲	-75	0.04	0.6	2.1			
						Doubler to 175 Mc→ Tripler to 175 Mc→				300	0	▲	-100	0.035	0.6	2.1	1.3		
12.6 6.3	0.9 1.8	4 $\frac{5}{16}$	1 $\frac{15}{16}$	8.2 $\frac{1}{2}$	C-P	250	450	72	27	380	—	250	-60	0.16	13	35	5894		
					At 470 Mc→				380	—	250	-60	0.16	13	35				
					C-T-F	250	600	120	40	500	—	250	-60	0.2	13	55			
					At 470 Mc→				500	—	250	-60	0.2	13	55				
6.3	1.25	3 $\frac{13}{16}$	1 $\frac{23}{32}$	4.5 $\frac{1}{2}$ 7000	C-M	250	600	80	40	400	—	220	-175	0.14	8	16	6146		
					Tripler to 462 Mc→				400	—	220	-175	0.14	8	16				
					• AB ₂	—	750	—	25	750	90	165	-46	0.022	0.4	131			
					• C-P	60	600	—	16.7	600	67.5	150	-87	0.112	0.4	52			
						• C-T-F	60	750	—	25	750	90	160	-62	0.12	0.2	70		
26.5	0.3	Same as 6146 except for heater rating.														6159			
6.3	1.25	3 $\frac{13}{16}$	1 $\frac{23}{32}$	4.5 $\frac{1}{2}$ 7000	Typical Operation in Rectangular-Wave Pulse Modulator Service: Peak Plate Amperes, 3 Pulse Duration, 30μ sec. Plate Supply Volts, 2000 Duty Factor 0.003														6293
12.6	0.375	2 $\frac{5}{8}$	7 $\frac{1}{8}$	16 $\frac{1}{2}$ 7000	For maximum ratings and typical operating conditions, refer to Type 5763.														6417
6.3	1.25	3 $\frac{9}{16}$	1 $\frac{13}{16}$	8.5 $\frac{1}{2}$ 4500	• AB ₂	—	600	85	25	600	—	200	-26	0.021	0.1	57	6524		
					• C-P	100	500	55	16.7	500	—	200	-61	0.1	0.2	40			
					• C-T-F	100	600	85	25	600	—	200	-44	0.12	0.2	56			
					• C-M	100	400	45	25	300	—	250	-148	0.11	4	8.5			
						Tripler to 462 Mc→				300	—	250	-148	0.11	4	8.5			
BEAM POWER TUBES AND PENTODES (Water-Cooled)																			
1.35†	975†	7 $\frac{23}{32}$	11 $\frac{3}{8}$	7.5 $\frac{1}{2}$	C-P	1000	4500	20250	16500	4250	—	600	-200	4.0	1000	4500	6448		
					C-T-F	1000	7000	45500	26000	6500	—	800	-140	6.3	800	11000			
					C-B-T	1000	7000	49000	26000	6500	—	950	-140	6.8	1000	12000			
Sync. level conditions per tube. Band width, 7 Mc.																			

To facilitate comparison between types, all values are given on an absolute-maximum basis. Unless otherwise specified, all values shown are for Continuous Commercial Service. * Intermittent Commercial and Amateur Service. For series filament arrangement, filament voltage is applied between pins No. 1 and No. 7. The grid-No. 1 voltage is referred to pin No. 1, and grid-No. 3 is connected to pin No. 1. For parallel filament arrangement, filament voltage is applied between pin No. 5 and pins No. 1 and No. 7 connected together. Grid-No. 1 voltage is referred to pin No. 5, and grid-No. 3 is connected to pin No. 5. Obtained from plate-supply voltage of 300 volts through a series resistor of 12500 ohms. § Grid-Screen Mu-Factor. † Per Section.

LEGEND FOR BASE AND ENVELOPE CONNECTION DIAGRAMS

Diagrams show terminals viewed from base or filament end of tube.

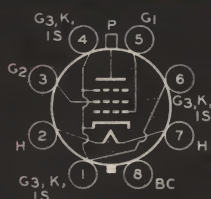
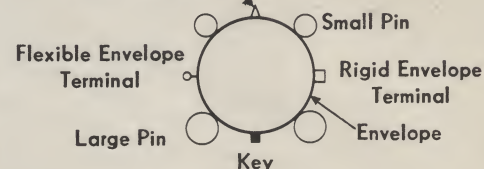
KEY TO TERMINAL DESIGNATIONS

Alphabetical subscripts B, D, P, T, and TR indicate, respectively, beam unit, diode unit, pentode unit, triode unit, and tetrode unit in multi-unit types.

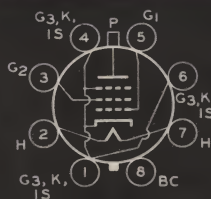
- | | | |
|-----------------------|---|----------------------|
| BC = Base Sleeve | I = Ignitor | NC = No Connection |
| BS = Base Shell | IC = Internal Connection—
Do Not Use | P = Plate (Anode) |
| F = Filament | IS = Internal Shield | PH = Holding Anode |
| FM = Filament Mid-Tap | K = Cathode | S = Shell |
| G = Grid | K _R = RF Cathode | TC = Thermocouple |
| H = Heater | ● = Gas-Type Tube | U = Unit |
| HM = Heater Mid-Tap | | W = Water Connection |

Orientation Symbol

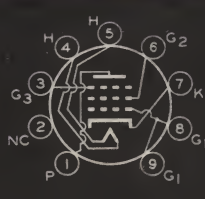
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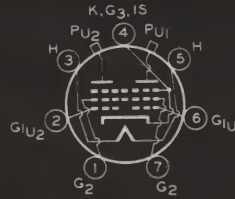
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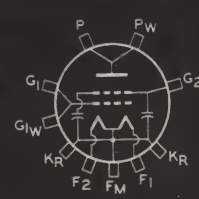
6293



6417



6524



6448

RECTIFIERS

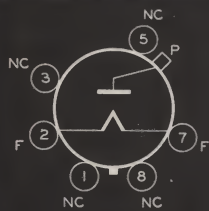
 Type	Description ^{△△}
VACUUM TYPES	
2V3-G	Tungsten-filament type. Octal 6-pin base. Skirted miniature cap.
2X2-A	Heater-cathode type. Small 4-pin base. Small cap.
5R4-GY	Full-wave coated-filament type. Octal 5-pin, micanol base.
217-C	Thoriated-tungsten filament type. Jumbo 4-pin base. Medium cap.
579-B	Thoriated-tungsten fil. Super-jumbo 4-pin base. Wire top terminal.
836	Heater-cathode type. Small 4-pin, bayonet base. Medium cap.
878	Tungsten filament type. Small 4-pin base. Skirted medium cap.
1616	Coated-filament type. Small 4-pin, bayonet base. Medium cap.
1654	Coated-filament, dry-cell type. Miniature 7-pin base.
5825	Thoriated-tungsten-filament type. Small 4-pin base.
8013-A	Thoriated-tungsten-filament type. Small 4-pin base. Skirted medium cap.
8020	Thoriated-tungsten-filament type. Medium 4-pin, bayonet base.

^{△△} Unless otherwise stated, these types are half-wave rectifiers.

 Type	Description ^{**}
MERCURY-VAPOR TYPES	
575-A	Same as 673 except for jumbo 4-pin, bayonet base.
673	Half-wave rectifier. Super-jumbo 4-pin, bayonet base. Medium cap.
816	Half-wave rectifier. Small 4-pin base. Small cap.
857-B	Half-wave rectifier. Special terminal connections. Skirted large cap.
866-A	Half-wave rectifier. Small 4-pin, bayonet base. Ceramic insulated medium cap.
869-B	Half-wave rectifier. Special end-mountings. Skirted large cap.
872-A	Same as 8008 except for jumbo 4-pin base.
5558	Half-wave rectifier. Small 4-pin, bayonet base. Medium cap.
5561	Half-wave rectifier. Rated for welder-control service with a maximum averaging time of 15 seconds. Super-jumbo 4-pin, bayonet base.
8008	Half-wave rectifier. Super-jumbo 4-pin base. Ceramic insulated medium cap.
GAS TYPES	
3B25	Half-wave xenon rectifier. Small 4-pin, bayonet base. Medium cap.
3B28	Half-wave xenon rectifier. Small 4-pin, bayonet base. Medium cap.

For key to terminal connections, see page 15. Note 8: F₁ lead has insulating beads. Note 10: F₁ is on left side of tube type marking on base. Note 11: Use jumpers across socket terminals 1 and 2, 3 and 4.

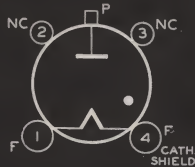
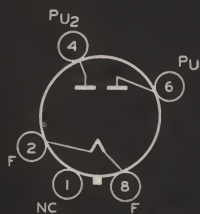
^{**} These types have coated filaments except the 5558 and 5561, which are heater-cathode types.



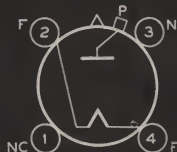
2V3-G



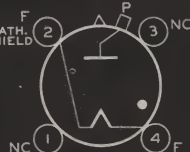
2X2-A

3B25 3B28
816 866-A

5R4-GY



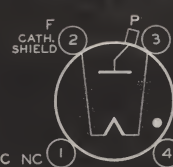
217-C



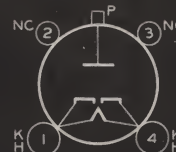
575-A 872-A



579-B



673 8008



836

See Note 8
857-B

RECTIFIERS

Applications	Cathode		Max. Dimensions Inches		Max. Plate or Anode Ratings			 Type
	Volts	Amp.	Length	Diam.	Peak Inverse Volts	Peak Amperes	Average Amperes	
VACUUM TYPES								
For high-voltage low-current uses.	2.5	5.0	4 ¹⁵ / ₃₂	1 ⁹ / ₁₆	16500†	0.012†	0.002†	2V3-G
For equipment subject to excessive shock and vibration.	2.5	1.75	4 ¹⁷ / ₃₂	1 ⁹ / ₁₆	12500†	0.06†	0.0075†	2X2-A
For low-power stages of transmitters.	5.0	2.0	5 ⁵ / ₁₆	2 ¹ / ₁₆	2800†	0.65†°	0.175†▲	5R4-GY
For renewal use.	10.0	3.25	8 ¹ / ₂	2 ⁵ / ₁₆	7500	0.6	0.15	217-C
For high-voltage low-current uses.	2.5	6.0	7 ⁷ / ₁₆	2 ¹ / ₁₆	20000	0.27	0.025	579-B
For transmitters subject to large ambient temperature range.	2.5	5.0	6 ⁹ / ₁₆	2 ⁷ / ₁₆	5000	1.0	0.25	836
For high-voltage low-current uses.	2.5	5.0	7 ⁵ / ₈	1 ¹³ / ₁₆	20000	0.02	0.005	878
For transmitters requiring quick operation.	2.5	5.0	6 ¹³ / ₁₆	2 ¹ / ₁₆	6000	0.8	0.13	1616
For high-voltage output from vibrator supply.	1.4	0.05	2 ⁷ / ₁₆	³ / ₄	4300	0.006	0.001	1654
For rf-operated, high-voltage, low-current power supplies.	1.6	1.25	5 ²⁷ / ₃₂	2 ¹ / ₁₆	60000	0.04	0.002	5825
For high-voltage low-current uses.	2.5	5.0	6 ¹ / ₁₆	2 ¹ / ₁₆	40000*	0.15	0.02	8013-A
For high-voltage low-current uses.	5.0	6.0	8	2 ⁵ / ₁₆	40000	0.75	0.1	8020

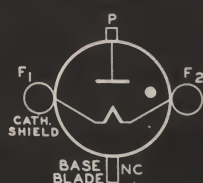
* For oil-immersed operation a maximum peak inverse voltage rating of 55,000 volts applies.

Cathode		Max. Dimensions Inches		Tube Voltage Drop	Max. Plate or Anode Ratings—For Supply Frequency of 60 cps					Operating Conditions (Single-Phase Full-Wave 2 Tubes) ^{°°}					 Type
					Temp. Range Condensed Mercury °C	Peak Inverse Volts	Peak Amperes	Average Amperes	Fault Amperes	Peak Inverse Volts	Max. AC Plate-to-Plate Supply Volts	Approx. DC Output Volts To Filter	Max. DC Output Amperes		
Volts	Amp.	Length	Diam.												
<i>Values shown in italics are for Quadrature operation, other values are for in-phase operation.</i>														MERCURY-VAPOR TYPES	
5.0	10.0	11 ¹ / ₁₆	3 ¹³ / ₁₆	For maximum ratings and operating conditions, refer to Type 673										575-A	
5.0	10.0	11 ³ / ₈	3 ¹³ / ₁₆	10	25 to 50 25 to 55 30 to 50	15000 10000 15000	6.0 7.0 10.0	1.5 1.75 2.5	60 70 100	15000 10000 —	10600 7000 —	4800 3200 —	3.0 3.5 —	673	
2.5	2.0	4 ¹¹ / ₁₆	1 ⁹ / ₁₆	15	20 to 60	7500	0.5	0.125	5	7500	5200	2400	0.25	816	
5.0	30.0	19 ⁷ / ₈ ♦	7 ¹ / ₈	15	30 to 40 25 to 60	22000 10000	40.0 40.0	10.0 10.0	400 400	22000 10000	15400 7000	7000 3200	20.0 20.0	857-B	
2.5	5.0	6 ⁹ / ₁₆	2 ⁷ / ₁₆	15	25 to 60 25 to 70 25 to 80	10000 5000 2500	1.0 1.0 2.0	0.25 0.25 0.5	20 20 20	10000 5000 2500	7000 3400 1600	3200 1600 800	0.5 0.5 1.0	866-A	
5.0	19.0	14 ⁷ / ₁₆	5 ¹ / ₈	15	30 to 40 30 to 50 30 to 60 30 to 40 30 to 50 30 to 60	20000 15000 10000 20000 15000 10000	10.0 10.0 10.0 10.0 20.0 20.0	2.5 2.5 2.5 2.5 5.0 5.0	100 100 100 100 100 100	20000 15000 10000 — — —	14000 10600 7000 — — —	6300 4700 3100 — — —	5.0 5.0 5.0 — — —	869-B	
5.0	7.5	8 ¹ / ₂	2 ⁵ / ₁₆	For maximum ratings and operating conditions, refer to Type 8008										872-A	
5.0	4.5	7	3	15	30 to 60 30 to 80	5000 2000	15.0 15.0	2.5 2.5	200 200	5000 2000	3400 1400	1600 600	5.0 5.0	5558	
5.0	10.0	11 ¹ / ₄	3 ¹³ / ₁₆	15	40 to 80 25 to 50	3000 10000	40 16	6.4 4	400 160	3000 —	2000 —	950 —	12.8 —	5561	
Welder-Control Service →				15											
5.0	7.5	8 ³ / ₄	2 ⁵ / ₁₆	15	20 to 60 20 to 70	10000 5000	5.0 5.0	1.25 1.25	50 50	10000 5000	7000 3400	3200 1600	2.5 2.5	8008	

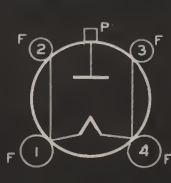
GAS TYPES

2.5	5.0	6 $\frac{5}{16}$	2 $\frac{1}{16}$	10	-75 to +90■	4500	2.0	0.5	20	4500	3000	1400	1.0	3B25
2.5	5.0	6 $\frac{5}{32}$	2 $\frac{1}{16}$	10	-75 to +90■	10000 5000	1.0 2.0	0.25 0.5	20 20	10000 5000	7000 3400	3200 1600	0.5 1.0	3B28

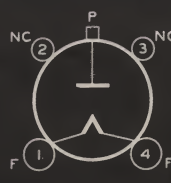
To facilitate comparison between types, all values are given on an absolute-maximum basis. ♦ Excluding Flexible Leads. °° Condition assumed; (1) Sine-wave supply, (2) Zero tube drop, (3) Pure resistance load, (4) No filter. ▲ With choke-input to filter. † Design-Center Values. ° Per Plate. ■ Ambient Temperature.



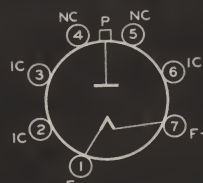
See Note 10
869-B



See Note 11
878



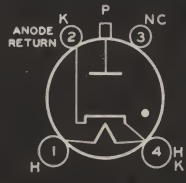
1616 8020
8013-A



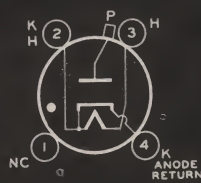
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5825



5558

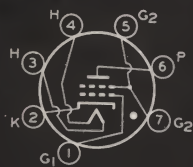


5561

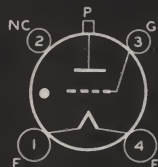
THYRATRONS

 Type	Description
TRIODES (Mercury-Vapor Types)	
3C23	Negative-control, filament type. Small 4-pin, bayonet base. Medium cap.
627	Negative-control, filament type. Super-jumbo 4-pin base. Medium cap.
676	Negative-control, heater-cathode type. Large shell, super-jumbo 4-pin base. Medium cap.
677	Negative-control, heater-cathode type. Super-jumbo 4-pin base. Med. cap.
5557	Negative-control, filament type. Small 4-pin bayonet base. Medium cap.
5559	Negative-control, heater-cathode type. Same base and cap as Type 5557.
5563-A	Negative-control coated-filament type. Medium metal-shell jumbo 4-pin base. Skirted medium cap. Unilaterally interchangeable with 5563.
5728/FG-67	Negative/positive-control, heater-cathode type. Small 4-pin, bayonet base. Medium cap.
TRIODES (Gas Types)	
629	Negative-control, heater-cathode type. Small 5-pin base.
884	Negative-control, heater-cathode type. Small shell, octal 6-pin base.
885	Same as 884 except for 2.5-volt heater, small 5-pin base. For renewal use.
6130/3C45	Hydrogen thyatron, heater-cathode type with positive-control characteristic. For pulsing service involving high repetition rates, high peak currents, and low average currents in low-impedance circuits. Full ratings at pressures down to 70 mm. of mercury (50,000 feet). Small 4-pin base. Small cap.
TETRODES (Mercury-Vapor Types)	
105	Negative-control, heater-cathode type. Super-jumbo 4-pin, bayonet base. Large top cap and large side cap.
172	Metal, negative-control, heater-cathode type. Special terminal connections.
672-A	Negative-control, heater-cathode type. Super-jumbo 4-pin base. Skirted medium cap.
5560	Heater-cathode type. Small 4-pin, bayonet base. 2 medium caps.
TETRODES (Gas Types)	
2D21	Miniature heater-cathode type. Can be operated in a high-sensitivity circuit directly from a high-vacuum phototube. Miniature 7-pin base.
3D22-A	Xenon-filled heater-cathode type. Suitable for motor-control. Medium metal shell, giant 7-pin, bayonet base.
502-A	Metal, negative-control, heater-cathode type. Octal 8-pin base.
2050	Negative-control, heater-cathode type. Can be operated directly from a high-vacuum phototube. Octal 8-pin base.
5696	Miniature 7-pin type for relay applications such as counter-circuits where low-heater-current drain and short deionization time are important considerations.
6012	Negative-control, heater-cathode type. For grid-controlled rectifier and relay applications, particularly those involving motor-control and low-power inverter service. Octal 6-pin base.

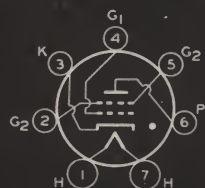
For key to terminal connections, see page 15.



2D21 5696



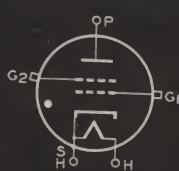
3C23 5557



3D22-A



105



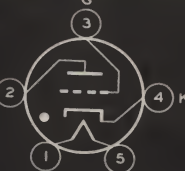
172



502-A



627



629 885

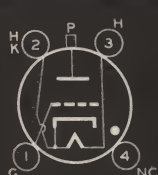


672-A

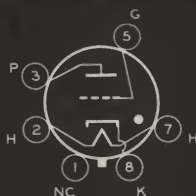
THYRATRONS

Applications	Cathode		Max. Dimensions Inches		Approx. Tube Drop Volts	Maximum Ratings							 Type
						Temperature Range		Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Cathode Amperes	Average Cathode Amperes	Fault Amperes	
	Volts	Amp.	Length	Diam.		Condensed Mercury °C	Ambient °C						
TRIODES (Mercury-Vapor Types)													
Relay controls and grid- controlled rectifiers.	2.5	7.0	6 1/8	2 1/16	15	—	-40 to +80†	1250	1250	6.0	1.5	120	3C23
	2.5	6.0	7	2 1/16	12	25 to 70	—	1250	2500	2.5	0.64	25	627
	5.0	10.0	11 3/4	3 13/16	12	40 to 80	—	2500	2500	40.0	6.4	200	676
			Welder-Control Ratings →		40 to 90	—	750	750	77.0	2.5	200		
	5.0	10.0	11 3/4	3 13/16	12	30 to 50	—	10000	10000	15.0	4.0	16	677
	2.5	5.0	6 5/8	2 7/16	16	40 to 80	—	2500	5000	2.0	0.5	40	5557
	5.0	4.5	7 1/4	3	16	40 to 80	—	1000	1000	15.0	2.5	200	5559
	5.0	10.0	11 1/16	3 7/8	15	25 to 50 25 to 55	— —	20000 15000	20000 15000	6.4 10.0	1.6 1.8	50 50	5563-A
	Inverter service	5.0	4.5	7	3	16	40 to 80	—	1000	1000	15	2.5	200
TRIODES (Gas Types)													
Relaxation oscillators.	2.5	2.6	4 1/4	1 9/16	15	—	-40 to +70	350	350	0.2	0.04	2	629
	6.3	0.6	4 1/8	1 9/16	14	—	-75 to +90	350	—	0.3	0.075	—	884
			Max. Ratings for Relaxation Oscillator (Sweep-Circuit Service) {Peak Anode Volts, 300 Peak Cathode Amp., 0.3										
			2.5	1.5	4 3/16	1 9/16	For additional data, refer to Type 884						
Pulse Modulator	6.3	2.3	5 3/16	1 9/16	150	—	-50 to +90	3000 Min. DC Anode-Supply Volts, 800 Max. Pulse Duration, 6 μsec.	3000	35	0.045	—	6130/ 3C45
TETRODES (Mercury-Vapor Types)													
Relay controls and grid-controlled rectifiers.	5.0	10.0	11 1/4	2 13/16*	16	40 to 80	—	2500	2500	40.0	6.4	400	105
	Max. Ratings for Intermittent Service:					25 to 50	—	10000	10000	16.0	4.0	160	
	5.0	10.0	10 3/4	2 5/8*	16	40 to 80	—	2000	2000	40.0	6.4	400	172
	5.5	11.0	Welder-Control Ratings:			30 to 95	—	750	750	77.0	2.5	400	
Relay controls and ignitor firing.	5.0	5.0	8 1/8	2 5/16	12	40 to 80	—	2500	2500	40.0	3.2	150	672-A
	5.0	4.5	7 15/16	2 1/4*	16	40 to 80	—	1000	1000	15.0	2.5	200	5560
TETRODES (Gas Types)													
High-sensitivity relay control circuits.	6.3	0.6	2 1/8	3/4	8	—	-75 to +90	650	1300	0.5	0.1	10	2D21
	Typical Operating Conditions for Relay Service {Anode Volts, 400 Grid-No. 1 Circuit Resistance, 1 megohm												
	6.3	2.6	4 5/8	2 3/8	10	—	-75 to +90	650	1500	8.0	0.8	30	3D22-A
	Grid-No. 1 Circuit Resistance, 2 megohms max.												
	6.3	0.6	2 5/8	1 5/16	11	—	-55 to +90	650	1300	1.0	0.1	10	502-A
	6.3	0.6	4 1/8	1 9/16	8	—	-75 to +90	650	1300	1.0	0.1	10	2050
	Grid-No. 1 Circuit Resistance, 10 megohms max.												
	6.3	0.15	1 3/4	3/4	10	—	-55 to +90	500	500	0.1	0.025	2	5696
	Typical Operating Conditions {AC Anode Voltage (RMS), 117 volts for Relay Service: {Grid-No. 1 Bias Volts (RMS), 5							Peak Grid-No. 1 Signal Volts, 5 Grid-No. 1 Circuit Resistance, 0.1 megohm					
	6.3	2.6	4 1/4	1 23/32	10	—	-75 to +90	650	1300	5	0.5	20	6012

All Thyatron ratings are for Continuous Service, unless otherwise specified. † Tube contains mercury and gas. Recommended condensed-mercury temperature, 40°C.
* Maximum Radius.



676 677



884



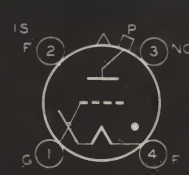
2050



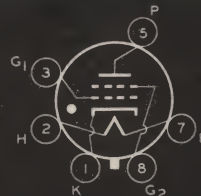
5728/FG67 6130/3C45



5560

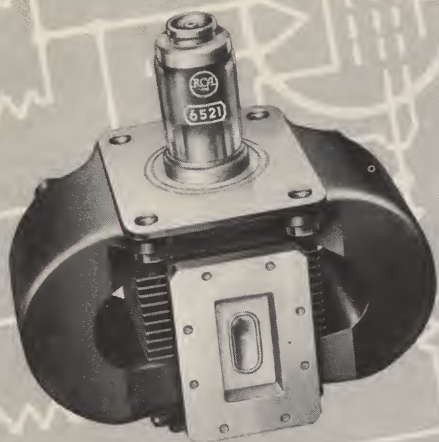


5563-A



6012

MAGNETRONS AND KLYSTRONS

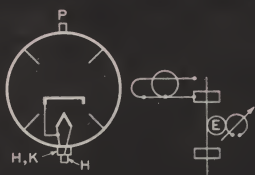


 Type	Description
MAGNETRONS	
2J41	Low-power, frequency-stabilized type with an integral magnet. Intended primarily for use as a pulsed oscillator at 9310 Mc in beacon service. Minimum peak stabilized power output of 300 watts at 9310 Mc and a duty cycle of 0.003.
2J50	Magnetron of the internal-resonant circuit type. For pulsed-oscillator service such as radar at a fixed frequency of 8825 Mc. Requires use of an external magnet. Peak power output 45 Kw at a duty cycle of 0.001 and peak anode current of 12 amperes.
4J50	Magnetron of the internal-resonant circuit type with an integral magnet. For pulsed-oscillator service at a fixed frequency of 9375 Mc in applications such as radar. Peak power output 240 Kw at a duty cycle of 0.001 and peak anode current of 27.5 amperes.
4J52	Magnetron of the internal-resonant circuit type with an integral magnet. For pulsed-oscillator service at a fixed frequency of 9375 Mc in applications such as radar. Peak power output 80 Kw at a duty cycle of 0.001 and peak anode current of 15 amperes.
6521	Magnetron of the internal-resonant circuit type with an integral magnet. Designed and conservatively rated for long, reliable performance as a pulsed oscillator at a fixed frequency of 5400 Mc in weather radar equipment.
 Type	Description
KLYSTRONS	
2K26	Single-resonator, reflex type with an integral resonant cavity and mechanical tuning mechanism. For local oscillator service in applications such as microwave receivers. Can be electrically tuned to give about a 55 Mc venier adjustment. Useful power output about 100 Mw.

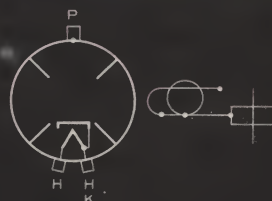
VACUUM-GAUGE TUBES

 Type	Description
1945	Hydrogen-Sensitive, Ionization Type. Especially useful in locating minute leaks in vacuum enclosures. Can be connected to either a glass or a metal system. Has 1/8"-27 NPT pipe thread. Metal shell. Octal 8-pin base.
1946	Thermocouple Type. Resistance of thermocouple, 5 ohms approx.
1947	Pirani Type. Each tube individually calibrated to 135.8 ohms res., under vacuum better than 3×10^{-5} mm of Hg. Small 4-pin base.
1949	Ionization Type having two tungsten filaments, one a spare.
1950	Ionization Type similar to 1949 but constructed with soft glass.
For use in determination of gas pressures in vacuum systems and vacuum enclosures.	

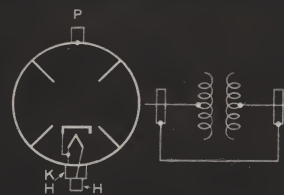
For key to terminal connections, see page 15.



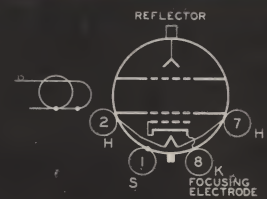
2J41



2J50



4J50 4J52 6521



NOTE: COAXIAL OUTPUT LINE PASSES THROUGH VACANT PIN POSITION No. 4.

2K26

Heater		Frequency	Maximum Ratings							Typical Operation					 Type
			Duty Cycle	Peak Anode Volts	Peak Anode Amperes	Peak Power Input Watts	Pulse Duration μ sec.	Operation Time in 100 μ sec. Interval	Anode-Block Temp. $^{\circ}$ C	Duty Cycle	Peak Anode Volts	Peak Anode Amperes	Pulse Duration μ sec.	Peak Power Output Watts	
Volts	Amp.	Mc													
MAGNETRONS															
5.0	0.32 to 0.4	9310 $\pm$ 10	0.003	3000	1.2	3600	0.6	3	85	0.003	2500	1	0.5	350	2J41
6.3	1.0	8825 $\pm$ 75	0.0012	16000	16	150000	2.5*	5	150	0.001	12000	12	1	45000	2J50
13.75	3.0 to 3.75	9375 $\pm$ 30	0.001	23000	27.5	635000	1.2	6	150	0.001	21000	23.5	3	185000	4J50
12.6	2.1	9375 $\pm$ 30	0.002	16000	30	450000	1.2	6	150	0.001	15000	15	5	80000	4J52
10	3.2	5400 $\pm$ 20	0.001	16000	16	256000	2.2	5	150	0.0008	15000	13.5	2	85000	6521
Heater		Frequency Range	Maximum Ratings							Typical Operation as CW Oscillator—Class C Frequency: 6600 Mc.; Mode A; Wave Guide: $\frac{3}{4}$ " x $1\frac{1}{2}$ "					 Type
			Resonator		DC Reflector Volts	Temp. of Coaxial Output Line $^{\circ}$ C	Peak Heater-Cathode Volts	Ambient Temp. of Shell $^{\circ}$ C	Resonator		DC Reflector Volts	Half-Power Electronic-Tuning Frequency Change Mc	Power Output Watts		
			DC Volts	DC Amperes					DC Volts	DC Amperes					
Volts	Amp.	Mc													
KLYSTRONS															
6.3	0.44	6250 to 7060	330	0.035	0 to -350	90	$\pm$ 50	110	300	0.025	-65 to -120	55	0.12	2K26	

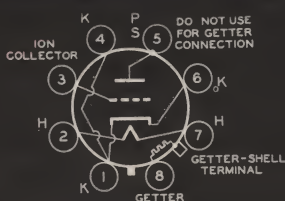
VACUUM-GAUGE TUBES

Heater or Filament		Maximum Dimensions Including Tubulation Inches			Type of Glass	Maximum Ratings			Operating Position	Sensitivity Range of Gas Pressure				 Type
Volts	Amp.	Length	Diam.	Tubulation Diam.		Filament Volts	DC Plate Volts	Dissipation Watts		Useful		Greatest Sensitivity		
										Microns of Hg	Mm of Hg	Microns of Hg	Mm of Hg	
Htr. 6.3	0.75	6 $\frac{3}{8}$	1 $\frac{5}{16}$	$\frac{3}{16}$	Hard, Corning Code 772 Nonex	—	300	7	Any	Will detect an increase in hydrogen pressure of less than 10 ⁻⁷ mm (10 ⁻⁴ microns) of Hg.				1945
Htr. 1.0	0.07	6 $\frac{1}{4}$ ♦	1 $\frac{11}{16}$	$\frac{3}{8}$	Hard, Corning Code 772 Nonex	—	—	—	Any	1000 to 0.1	1 to 10 ⁻⁴	1000 to 1	1 to 10 ⁻³	1946
Fil. 10	0.07 to 0.1	7 $\frac{9}{16}$	1 $\frac{3}{16}$	$\frac{7}{32}$	Soft, Corning Code 001 Lead	16	—	—	Any	1500 to less than 10	1.5 to less than 0.01	500 to 10	0.5 to 0.01	1947
Fil. 5	3.5	11 $\frac{1}{2}$ ♦	2 $\frac{3}{16}$ *	$\frac{1}{2}$	Hard, Corning Code 772 Nonex	6.5	—100	—	See Note A	—	—	below 0.1	below 10 ⁻⁴	1949
Fil. 5	3.5	11 $\frac{1}{4}$ ♦	2 $\frac{3}{16}$ *	$\frac{1}{2}$	Soft, Corning Code 012 Lead	6.5	—100	—	See Note A	—	—	below 0.1	below 10 ⁻⁴	1950

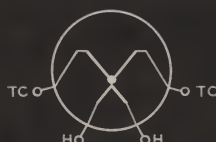
* Maximum radius.

♦ Excluding flexible leads.

Note A: Vertical, with tubulation up or down; horizontal, with stem press in vertical plane.



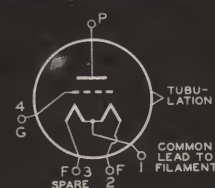
1945



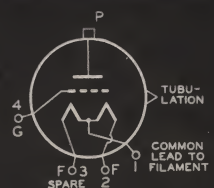
1946



1947



1949



1950

IGNITRONS

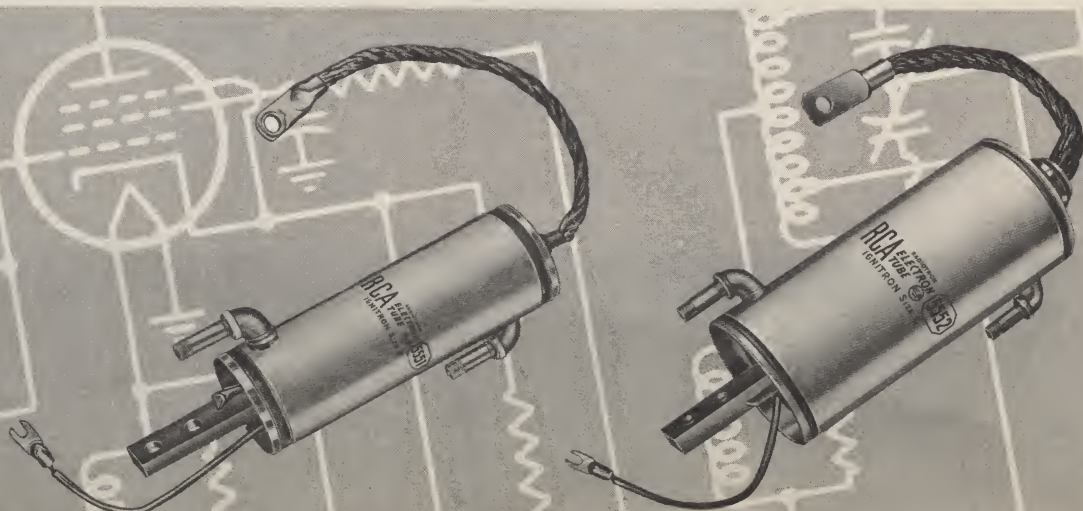
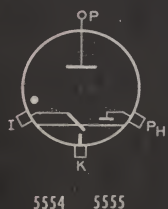
RCA Type	Descriptions	Max. Dimensions Inches		Class of Service ^o	RMS Supply Volts	Maximum Anode Ratings ■ For Frequencies from 25 to 60 Cycles							
		Rigid Length	Diam.			Kva Demand	Peak Inverse or Forward Volts	Fault Amperes*	Averaging Time Seconds	Peak Amperes		Average Amperes	
										Welder Service	Rectifier Service	Welder Service	Rectifier Service
5550 Size A	Compact, steel-jacketed type with removable clamp for air or water cooled operation. Handles 300-KVA demand. Equivalent to a 150-ampere magnetic contactor. <i>For Max. Ignition Requirements, see Note 1.</i>	10	2 3/4	AC Welder- Control	250	150*	—	1680	27.8	850	—	4.86	—
					600	150*	—	700	11.6	355	—	4.86	—
					250	300 ^Δ	—	3360	22	1700	—	12.1	—
					600	300 ^Δ	—	1400	9.2	707	—	12.1	—
5551 Size B	Steel-jacketed type recommended for welder-control service but also useful for rectifier service in low-power circuits. Will handle a 600-kva demand and is equivalent to a 300-ampere magnetic contactor. <i>For Max. Ignition Requirements, see Note 1.</i>	13 1/2	5 3/4	AC Welder- Control	250	200	—	2240	18	1130	—	56	—
					600	200	—	940	7.5	470	—	56	—
				Inter- mittent Rectifier	250	600	—	6700	18	3350	—	30.2	—
					600	600	—	2800	7.5	1400	—	30.2	—
5552 Size C	Steel-jacketed type recommended for welder-control service but also useful for rectifier service in low-power circuits. Will handle a 1200-kva demand and is equivalent to a 600-ampere magnetic contactor. <i>For Max. Ignition Requirements, see Note 1.</i>	14 1/2	7 1/4	AC Welder- Control	250	400	—	4480	14	2240	—	140	—
					600	400	—	1860	5.8	930	—	140	—
				Inter- mittent Rectifier	250	1200	—	13450	14	6730	—	75.6	—
					600	1200	—	5600	5.8	2800	—	75.6	—
5553-A Size D	Steel-jacketed type recommended for welder-control service. Will handle a 2400-kva demand and is equivalent to a 1200-ampere magnetic contactor. <i>For Max. Ignition Requirements, see Note 1.</i>	20	9 3/8	AC Welder- Control	250	800	—	9000	11	4500	—	355	—
					600	800	—	3740	4.6	1870	—	355	—
				Inter- mittent Rectifier	250	2400	—	27000	11	13500	—	192	—
					600	2400	—	11200	4.6	5600	—	192	—
5554	Steel-jacketed type for rectifier service in the 125, 250, 600, and 900-volts dc power field. Will handle a 1200-kva demand in 2000-volt resistance welder-control service. <i>For Max. Ignition Requirements, see Note 2. For Max. Auxiliary Anode Requirements, see Note 3.</i>	17 1/2	7 5/8	Rectifier	—	—	900	6000	—	—	900	—	100
				AC Welder Control	2400	1200	—	3000	1.5	720	—	75	—
				AC Welder Control	2400	600†	—	3000	0.5	360	—	113	—
				Rectifier	—	—	900	12000	—	—	1800	—	200
5555	Steel-jacketed type for rectifier service in the 125, 250, 600, and 900-volts dc power field. Will handle a 2400-kva demand in 2400-volt resistance welder-control service. <i>For Max. Ignition Requirements, see Note 2. For Max. Auxiliary Anode Requirements, see Note 3.</i>	18 1/2	9 1/8	Rectifier	—	—	900	12000	—	—	1800	—	200
				AC Welder- Control	2400	1105†	—	6000	0.5	650	—	207	—
				AC Welder- Control	2400	2400	—	6000	1.66	1400	—	135	—
				Rectifier	—	—	900	12000	—	—	1800	—	200
5822	Steel-jacketed type. Intended especially for use in frequency-changer resistance-welding service. <i>For Max. Ignition Requirements, see Note 1.</i>	14 1/2	7 1/4	Frequency- Changer Resistance- Welding	—	—	1200	18750	—	1500	—	20	—
				Frequency- Changer Resistance- Welding	—	—	1200	5250	—	420	—	70	—
				Frequency- Changer Resistance- Welding	—	—	1500	15000	—	1200	—	16	—
				Frequency- Changer Resistance- Welding	—	—	1500	4200	—	336	—	56	—

Note 1: Ignition Requirements for Types 5550, 5551, 5552, 5553-A, and 5822: Peak Positive Volts, 200 min.—900 max. (for 5822, max. value equal to anode volts); Peak Amperes, 30 min.—100 max.; Average Amperes, 1.0 max.; Ignitor Ignition Time, 100 μ sec. max.

Note 2: Ignition Requirements for Types 5554 and 5555: Peak Positive Volts, 150 min.—900 max.; Peak Amperes, 40 min.—100 max.; Average Amperes, 2.0 max.; Ignitor Ignition Time, 100 μ sec. max.

Note 3: Auxiliary Anode Requirements for Types 5554 and 5555: Peak Inverse Volts (main anode conducting), 25 max.; Peak Inverse Volts (main anode non-conducting) for the 5554, 150 max.; for the 5555, 160 max.; Average Amperes, 5.0 max.

■ RMS demand-voltage, —current, and kva are on the basis of full-cycle conduction (no phase delay) regardless of whether or not phase control is used. * Including cooling connections. * For duration of 0.15 sec. max. The fault current value is not an operating rating. It is given to assist equipment designers in choice of circuit components such that tube will not be subjected to disastrous currents under abnormal service conditions approximating a short circuit. ° AC welder-control ratings shown are for two tubes in inverse parallel. ° With clamp temperature: max., 75°C.; min., 10°C. Δ With clamp temperature: max., 50°C.; min., 10°C. † 100% duty.



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2C43	2	673	16	872-A	16	5618	14
2D21	18	676	18	878	16	5671	6
2E24	12	677	18	880	8	5675	4
2E26	12	800	2	884	18	5696	18
2J41	20	801-A	2	885	18	5713	6
2J50	20	802	12	889-A	8	5728/FG67	18
2K26	20	803	12	889R-A	6	5762/7C24	6
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2X2-A	16	805	2	891-R	6	5770	8
3A4	12	806	2	892	8	5771	8
3B25	16	807	12	892-R	6	5786	6
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8D21	10	837	12	5550	22	6293	14
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DRY BATTERIES

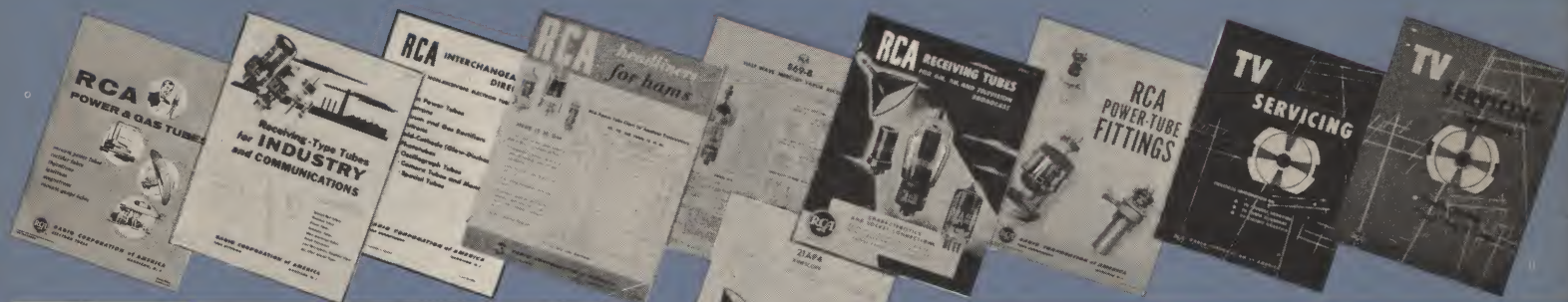
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TECHNICAL PUBLICATIONS ON RCA ELECTRON TUBES



● **TUBE HANDBOOK—ALL TYPES HB-3** (7 $\frac{3}{8}$ " x 5")—The bible of the industry—contains over 3100 pages of loose-leaf data and curves on all RCA receiving tubes including kinescopes, power tubes, cathode-ray tubes, phototubes, and special tubes. Four deluxe 4-prong binders imprinted in gold. Available on subscription basis. Price \$13.50* including service for first year. Write to Commercial Engineering for descriptive folder and order form.

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